JVC

SERVICE MANUAL

COMPACT DISC AUTOMATIC CHANGER

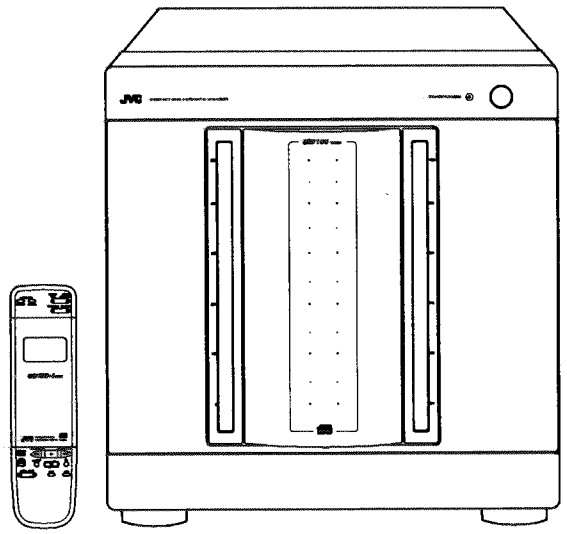
XL-MC301

Area Suffix
C .....Canada
J .....the U.S.A.

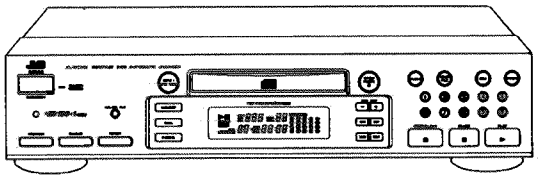
COMPACT disc DIGITAL AUDIO

100+1-DISC

COMPU LINK Remote Control Component



XL-MC301M



XL-MC301C

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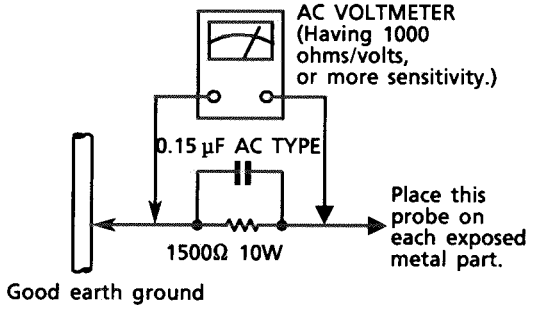
No. 20507
Mar. 1995

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 µF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. CAUTION : If safety switches malfunction, the laser is able to function.
6. CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

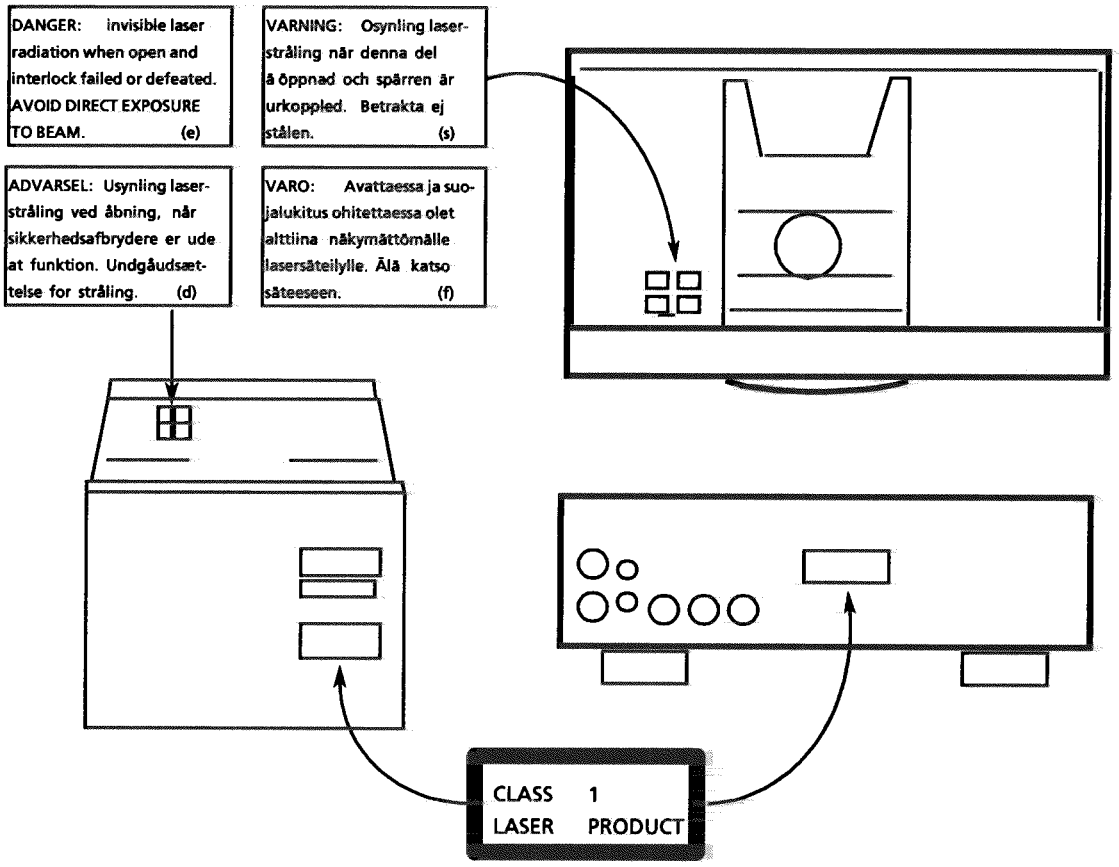
ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning, når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL

(Except for the U. S. A.)


DANGER: invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)
VARNING: Osynlig laserstråling när denna del å öppnad och spärren är urkoppled. Betrakta ej stålen. (s)
ADVARSEL: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude at funktion. Undgåudsættelse for stråling. (d)
VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)
CLASS 1
LASER PRODUCT

CLASSIFICATION LABEL

(Except for the U. S. A. and Canada)

Welcome!

We would like to thank you for purchasing one of our JVC products.
Before connecting this unit to the wall outlet, please read the instructions carefully to ensure that you obtain the best possible performance.
If you have any questions, please consult your JVC dealer.

With this system, the 100 disc capacity of the player unit, combined with single disc tray in the control unit lets you playback a total of 101 compact discs.
By adding one XL-MCM1 unit, you can expand the capacity to 201 discs, adding two XL-MCM1 units lets you expand the system to its maximum capacity, 301 discs.
Since this system operates the same way when you add XL-MCM1 units, please retain these instructions in case you have any questions regarding operation.

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INTRODUCTION

About this manual

This manual is organized as follows:

The first part of this manual, "INTRODUCTION", tells you where to place this unit for best results, how to prevent malfunctions and what types of discs can be used in this unit.

The second part, "BEFORE USING FOR THE FIRST TIME", shows you what to do before playing discs. This part describes how to install batteries in the remote control unit and how to connect this unit to the amplifier and other components.

The third part, "LOCATION OF BUTTONS", shows the names of buttons and their location and gives you basic knowledge of the functions of buttons on the control unit and the remote control unit. Refer to the section on the indicated page for each button.

The fourth part, "BASIC OPERATIONS", describes how to load discs, and convenient basic functions for playing discs.

The fifth part, "VARIOUS PLAYBACK PATTERNS", describes various functions for playing discs, and convenient functions for recording.

The sixth part, "DISC TITLE MEMORY BANK", describes the disc title memory bank function which is useful for locating a desired disc among the discs stored in the player unit.

The seventh part, "APPENDIX", describes the compu link remote control system which facilitates various operations between JVC components, and explains how to take care of discs.

The eighth part, "TROUBLESHOOTING", tells you how to check the unit if a malfunction occurs.

The ninth part, "SPECIFICATIONS", gives you technical information regarding this unit and tells you what accessories you have.

About the names of the units
The XL-MC301 system is composed of two units, the XL-MC301C and the XL-MC301M. These instructions call the XL-MC301C the "control unit," and call the XL-MC301M the "player unit" when describing their operations.

Precautions

Best location
Select a location which is level, dry and neither too cold nor too hot (temperature range 5°C (41°F) to 35°C (95°F)). Also, avoid dusty locations or any location subject to vibration.

If interference occurs
If this equipment is placed near a tuner or a radio receiver tuned to AM frequencies, interference may occur. If this happens, we recommend either that you move this unit as far away from the tuner or receiver as possible, or temporarily turn off the power to this unit.

Load only compact discs
Do not load anything except compact discs into the playback or the control unit.

If a problem persists
If something goes wrong, turn off the power immediately. If the problem remains when you turn the power back on, turn off the power again and consult your JVC dealer.

Handling the power cord
When unplugging the power cord from a wall socket, pull from the plug body. Never pull on the power cord.

Volume settings
A CD player has almost no background noise. Therefore, the technique of setting the volume before the music starts by listening to the background level, as used with analog turntables and tape decks, cannot be used and may result in speaker damage if you set the volume too high.

Condensation
If a CD player is moved from a cold to a warm location or is used in a room subject to excessive humidity, or where a fire has just been lit, condensation could form on the optical components used in the unit. This may prevent the laser beam from transmitting properly and cause noise or even malfunction.
If condensation forms and prevents the CD player from functioning properly, leaving the player turned on for an hour or two should remove the condensation. If the CD player does not function properly at the end of this time, please consult your JVC dealer.

Transporting the unit
When carrying this unit, it is best to avoid tilting it or turning it upside-down. If you have to tilt the unit, be sure to remove the disc first.

Using compact discs
Compact discs are made of plastic and can be damaged easily. If the disc is dirty, scratched, warped or otherwise damaged, the digital information may not be picked up correctly.

Applicable discs
This unit can only be used with compact discs bearing the mark below. Do not use other types of discs.

COMPACT disc DIGITAL AUDIO

BEFORE USING FOR THE FIRST TIME

Checking the Supplied accessories

Be sure all of the following accessories were included with your XL-MC301:

Remote control unit (RM-SXMC 301U): 1

Battery (R6P, AA): 2

AC power cord: 1

Control/Signal cord 3P: 1

Compu link cable: 1

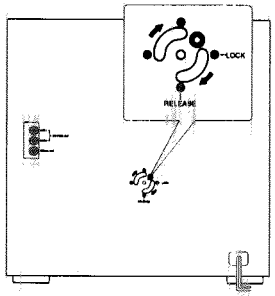
Audio cord: 1

CD booklet: 1

Instruction: 1

Releasing the Transport Lock

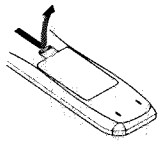
This unit is equipped with a transport lock in order to protect the inside mechanism during transport. Please make sure to release the lock before you start using the unit.
Turn the Transport lock knob clockwise to the RELEASE position . The unit is inoperative when this knob is set to the LOCK position.



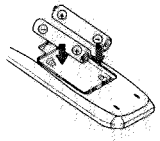
Installing batteries in the remote control unit

Before operating the remote control unit, install two batteries.

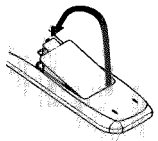
1. **Remove the rear cover of the remote control unit.**



2. **Install batteries. Be sure to install the batteries with the correct polarity, (+) and (–).**



3. **Attach the rear cover.**



Notes

Incorrect battery usage can cause corrosion and damage the remote.
To prevent damage to the remote and extend battery life:

- *Install batteries observing the correct polarity, (+) and (–).*
- *Do not use a combination of old and new batteries.*
- *Be sure to use the correct batteries (batteries with similar shapes may have different voltage ratings).*
- *Remove the batteries from the remote if it is not going to be used for a long time.*
- *Do not expose batteries to heat or flame.*

Battery replacement

Battery service life varies depending on the conditions of use but standard life is about one year. When batteries become weak, the remote control's operating distance decreases. If this happens, replace the batteries (1.5 V, R6P, size AA) with new ones.

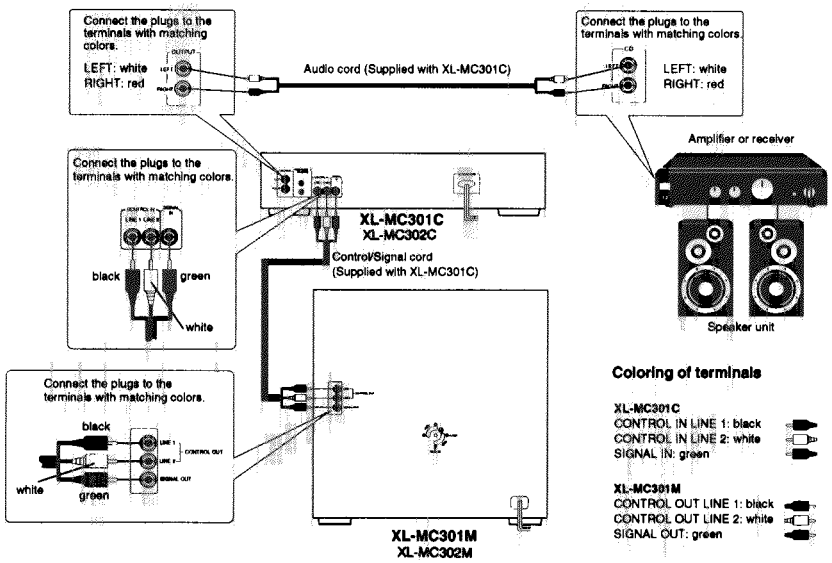
Notes

- *Extremely low temperatures may shorten battery life.*
- *Be sure to replace the batteries within 3 minutes. Otherwise, the items stored in the disc title memory bank will be erased.*

Connections

Important ***Please set up the units in the following order.***

1 Connect plugs of the audio cord and the control/signal cord correctly by following the illustration below.
2 Connect the AC power cord of each unit last.
Incorrect connection order makes the operation impossible.

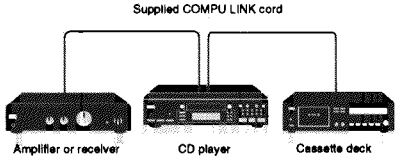


Notes

- ***Do not connect the power plug to a wall outlet until you have completed all connections and set the transport lock knob to the RELEASE position. Making connections with the AC power cord connected to a wall outlet may cause a malfunction. If you connect the power cord to a wall outlet before connecting the control/signal cord between the control and player unit, you may not be able to operate the unit. If this happens, unplug the power cord for a moment, then plug it back in.***
- *Connect the plugs firmly. Loose connections may cause noise or malfunction.*
- *Do not lay the control/signal cord near the AC power cord, it may produce noise in the audio signal.*
- *Never connect this unit's OUTPUT jacks to an amplifier or receiver's PHONO jacks. It may damage the components.*
- *Make sure the same channels are connected between this unit and the amplifier or receiver: LEFT to LEFT and RIGHT to RIGHT.*
- *Do not lay the audio cord near the AC power cord, it may produce noise in the audio signal.*

Compu Link Connections

The Compu Link jacks are used to input and output control signals for the compu link remote control system. Connecting this unit to other JVC audio components with COMPU LINK SYNCHRO jacks provides automatic control of relative operations between the components and facilitates various operations, such as recording. COMPU LINK-compatible products are provided with the jacks marked COMPU LINK-1, COMPU LINK-2 or COMPU LINK-3, depending on the COMPU LINK version. The XL-MC301 is equipped with COMPU LINK-3. You can connect the XL-MC301 to components with previous versions of COMPU LINK, but only the previous versions features will be available.
Connect the COMPU LINK SYNCHRO jacks on the rear of this unit to the COMPU LINK SYNCHRO jacks on other JVC components with the supplied COMPU LINK cord. Since each component has two COMPU LINK SYNCHRO jacks you can connect two components to these jacks (there is no difference between the two jacks).



COMPU LINK
Remote
Control System

Note

- *Make sure that the COMPU LINK SYNCHRO jacks on each of the components are connected with COMPU LINK cords. Also, be sure to fully read the instructions supplied with each component.*
- *When using the Compu Link Remote Control System version 3, do not connect the power cord to the SWITCHED AC OUTLET of an amplifier or receiver. Otherwise, the automatic power on/off function cannot be carried out.*

Connecting the AC power supply

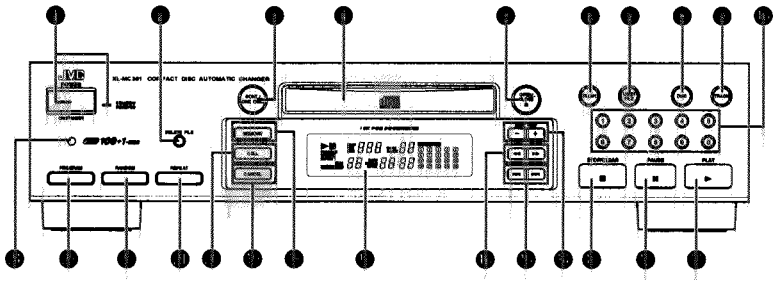
Plug the supplied detachable AC power cord into the AC POWER CORD inlet on the control unit.
Connect the AC power cord from both units to AC household electrical outlets after completing all other connections .

Notes

- *If you connect the power cord to a wall outlet before connecting the control/signal cord between the control and player unit, you may not be able to operate the unit. If this happens, unplug the power cord for a moment, then plug it back in.*

LOCATION OF BUTTONS

XL-MC302C
XL-MC301C (control unit)

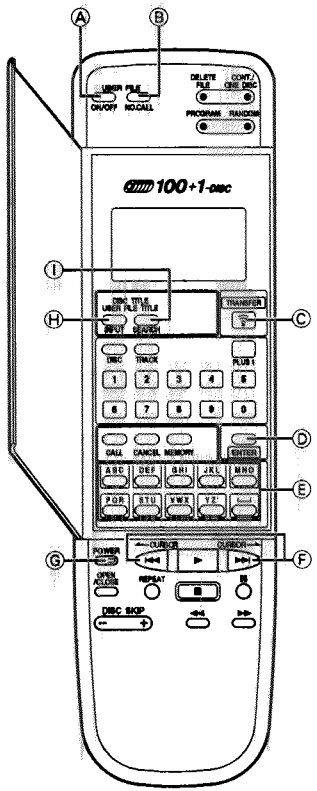


The operation for each button is described in the section indicated with the ➡ mark.

1. **POWER (ON/STANDBY) switch and STANDBY/RECEIVED Indicator**
   ➡ "Turning on the power" on page 9.
   To turn off the power completely, disconnect the power cord from the wall outlet.
2. **DELETE FILE button**
   ➡ "Deleting a file" on page 18.
3. **CONT./ONE DISC button**
   Selects either continuous playback of all discs or playback of the disc in the single disc tray.
   ➡ "CONTINUE PLAY" on page 13.
   ➡ "ONE DISC PLAY" on page 14.
4. **Single disc tray**
   ➡ "Loading the single disc tray" on page 10.
5. **▲ OPEN/CLOSE button**
   Opens and closes the single disc tray.
   ➡ "Loading the single disc tray" on page 10.
6. **PLUS 1 button**
   ➡ "Specifying the single disc tray" on page 11.
7. **USER FILE button**
   ➡ "USER FILE" on page 17.
8. **DISC button**
   ➡ "Specifying a desired disc" on page 11.
9. **TRACK button**
   ➡ "Specifying a desired track" on page 11.
10. **Numeric buttons**
    These buttons are used to specify the track number, disc number, or user file number.
11. **► PLAY button**
    "Playing a disc" on page 11.
12. **II PAUSE button**
    "Playing a disc" on page 11.
13. **■ STOP/CLEAR button**
    "Stopping playback" on page 12.
14. **DISC SKIP buttons**
    "Skipping to a desired disc" on page 12.
15. **I◄◄/►►I (skip) buttons**
    "Skipping to a desired track" on page 12.
16. **◄◄/►► (search) buttons**
    "Searching for a desired section" on page 12.
17. **Display window**
    Shows disc status information.
18. **MEMORY button**
    This button is used to memorize disc and/or track number in the following operation modes.
    ➡ "PROGRAM PLAY" on page 16.
    ➡ "USER FILE" on page 17.
    ➡ "DELETE FILE" on page 18.
19. **CANCEL button**
    Press this button to cancel displayed information.
20. **CALL button**
    This button is used to display information in the following operation modes.
    ➡ "Door lock function" on page 10.
    ➡ "PROGRAM PLAY" on page 16.
    ➡ "USER FILE" on page 17.
21. **REPEAT button**
    ➡ "REPEAT" on page 14.
22. **RANDOM button**
    ➡ "RANDOM PLAY" on page 15.
23. **PROGRAM button**
    ➡ "PROGRAM PLAY" on page 16.
24. **Remote sensor**
    Receives commands from the remote control unit.

Remote control unit

The buttons without descriptions have the same functions as those on the control unit.



Ⓐ USER FILE ON/OFF button
This button turns the user file playback or programming mode on and off.
➡ "USER FILE" on page 17.

Ⓑ USER FILE NO. CALL button
Use this button to select the user file number you wish to recall.
➡ "USER FILE" on page 17.

Ⓒ TRANSFER button
This button is used to transfer the disc and/or track number specified with the remote control unit to the control unit.

Ⓓ ENTER button
This button is used to enter the specified disc title or user file name. Be sure to press this button after selecting characters for disc titles and file names.

Ⓔ Alphabet buttons
These buttons are used to select letters for disc titles and user file names.

Ⓕ ←/→ CURSOR and ⏮/⏭ (skip track) buttons
These buttons are used to move the cursor position when inputting the disc or user file title with the alphabet buttons or to skip to adjacent tracks during disc playback.

Ⓖ POWER button
➡ "Turning on the power" on page 9.
This button turns both the control and player unit ON/STANDBY.

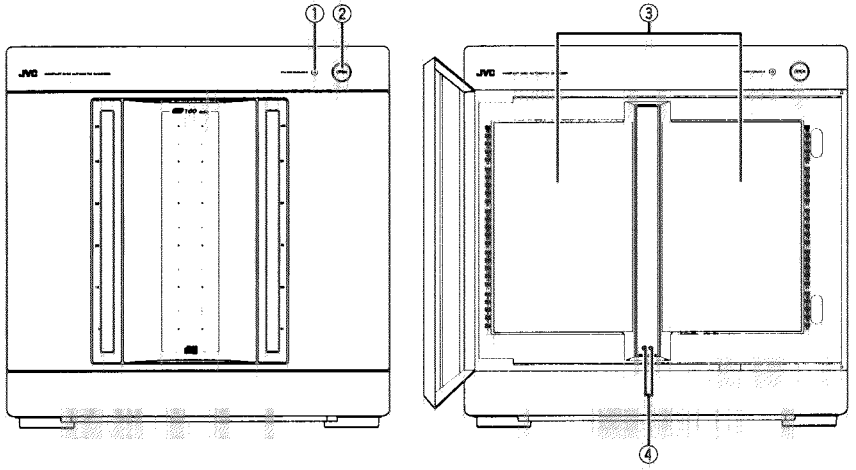
Ⓗ DISC TITLE/USER FILE TITLE INPUT button
➡ "TITLE INPUT" on page 19.

Ⓘ DISC TITLE/USER FILE TITLE SEARCH button
➡ "DISC SEARCH" on page 20.
➡ "USER FILE TITLE SEARCH" on page 20.

Remote control operation

Point the remote control unit toward the REMOTE SENSOR on the front of the control unit and operate it steadily and carefully. The remote control unit can be used within a range of about 7 meters (23 feet) from the REMOTE SENSOR, and at angles of up to about 30 degrees.

XL-MC302M
XL-MC301M (player unit)



① STANDBY/UNLOCK indicator
This indicator lights when the player unit is in standby.

② OPEN button
Press to open the front door on the player unit.

Note
The unit cannot be operated when the door is open.
Take care not to clamp your fingers when closing the player door.

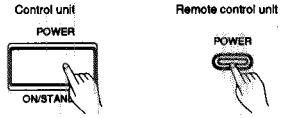
③ Disc trays
Up to 100 compact discs can be loaded into the player unit.

④ Disc position indicators
Indicate the position of the disc selected for playback. When you select a disc, the indicator moves up to the disc position and then moves, with the disc, down to the player section. During playback, the indicator blinks at the bottom of the window.

Preliminary operations before playing a disc

Turning on the power

Press the POWER button.



Both the control and player units turn on. Press again to turn the unit off and activate standby mode.

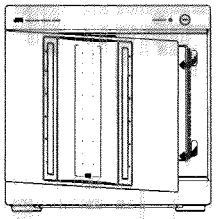
Note

This unit consumes approximately 4 watts of power in standby mode. To turn the power completely off, disconnect the power cord from the wall outlet.

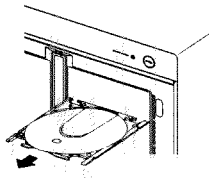
Loading discs in the player unit

You can load up to 100 discs in the player unit.

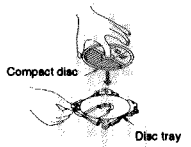
1. **Press the OPEN button to open the front door of the player unit.**
   Be careful not to put your hand too far inside the unit while the door is open.



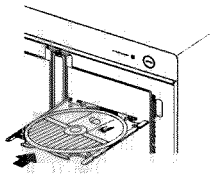
2. **Slide out the disc tray.**



3. **Place a disc on the disc tray with its label side facing up.**
   It is not possible to play discs inserted upside-down. Also, never place discs directly into the player unit without using a disc tray.



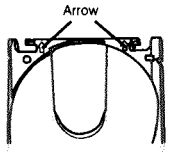
4. **Line up the disc tray with the grooves in the player unit and push the tray back in.**
   Be sure the disc tray is not skewed.



5. **Close the door. Make sure the STANDBY/UNLOCK indicator goes out. This indicator lights when the door is open while the power is on.**
   The unit can only be operated when the door is closed completely. "OPEN" is displayed if you try to access the player unit while the door is open.

Be careful with the following when handling the disc tray.

- Be sure to insert trays according to the direction indicated by the arrows marked on each tray. Never insert them in the opposite direction.



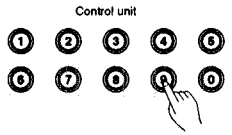
- Never bend the disc tray or force it into the player unit. A skewed disc tray may cause malfunction.
- The openings in the disc trays are for passage of the laser signal. These openings leave part of the shiny surface on the bottom of the disc exposed, please be careful not to touch this shiny surface.
- Before proceeding to operate the control unit, close the door of the player unit completely and confirm that the STANDBY/UNLOCK indicator has gone out.

Door lock function

You can lock the door(s) on the player unit(s) so that they will not open even if the OPEN button is pressed. This is a convenient function for keeping your CDs safe.

1. **While the unit is in the STANDBY mode, press the CALL button.**

2. **Enter "999" with the numeric buttons to lock the door(s) on the player unit(s).**



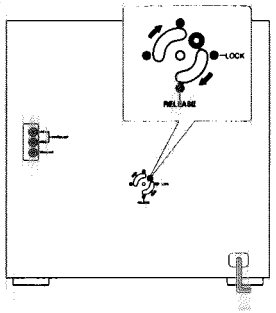
To release the door lock

Press the CALL button and enter "999" with the numeric buttons again.

XL-MC302M
When transporting the XL-MC301M

Secure the disc trays inside the player unit by turning the transportation knob on the rear panel 90° counterclockwise to the LOCK position.

- When moving the unit after playing a disc, press the OPEN button so that the disc which was played goes back to its original position. Take out all the discs loaded in the disc trays, close the door, and lock the unit for transportation.
- After the setting the unit in its new location, turn the knob clockwise to the RELEASE position. Playback is not possible when the disc trays are locked.



Loading the single disc tray

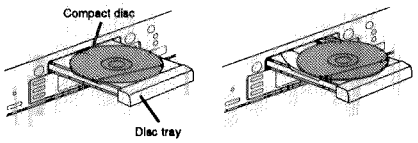
Use the ▲ OPEN/CLOSE button.

1. **Press the ▲ OPEN/CLOSE button to open the disc tray.**
2. **Place a disc flat in the grooved depression on the disc tray with its label side facing up.**
3. **Press the ▲ OPEN/CLOSE button to close the disc tray.**

Note

When loading a disc onto the disc tray, be sure to place the disc so that it lies flat in the grooved depression. Otherwise, the disc may be damaged or stuck in the unit when the tray is closed.

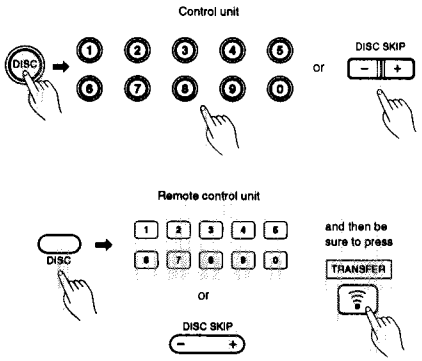
Good **No Good**



Basic functions for disc playback

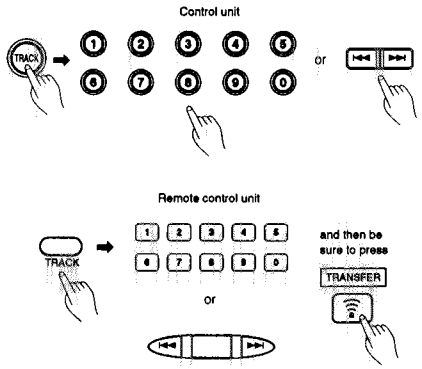
Specifying a desired disc

Use the DISC and the numeric buttons or the DISC SKIP buttons.



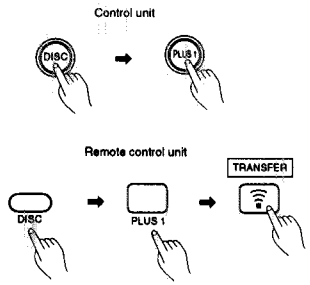
Specifying a desired track

Use the TRACK and the numeric buttons or the ⏮/⏭ buttons.



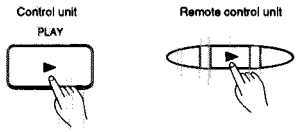
Specifying the single disc tray

Use the DISC and the PLUS 1 button to choose the single disc tray.



Playing a disc

Press the ► PLAY button after specifying the desired disc and/or track number.



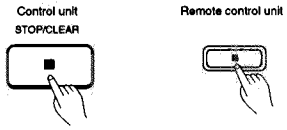
The ► indicator lights in the display and playback starts.

To stop playback temporarily
Press the ❚❚ PAUSE button on either the control or the remote control unit.
The ❚❚ indicator lights on the display and playback stops temporarily.
To resume playback, press either the ► PLAY button.

If you use the Compu Link system to connect this unit to a JVC amplifier or receiver, playback starts immediately from the beginning of the DISC PLUS 1, in one disc mode or continue mode when the ► PLAY button on the control/remote control unit or the CD button on the amplifier/receiver's source selector is pressed.

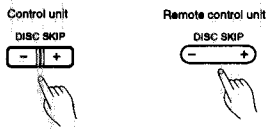
Stopping playback

Press the ■ button.



Skipping to a desired disc

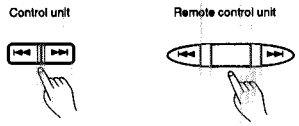
Use the DISC SKIP (–/+) buttons.



To skip back to the previous disc, tap the – button.
To skip to the next disc, tap the + button.

Skipping to a desired track

Use the ⏮/⏭ (skip) buttons.

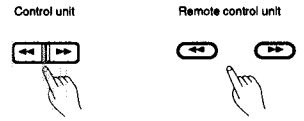


To skip to the beginning of the current track, tap the ⏮ button. To skip to the beginning of previous tracks, press the ⏮ button again.
To skip to the beginning of the next track, tap the ⏭ button.

Note
You can specify the track number by using the numeric buttons (See page 11). Press the ► PLAY button to play the specified track.

Searching for a desired section

Hold down a ◄◄/►► (search) button.



Playback advances or reverses rapidly.
The ◄◄ button puts playback into rapid reverse and the ►► button puts playback into rapidly advance. Release the button when you reach the section you desire, and the player resumes normal playback.

VARIOUS PLAYBACK PATTERNS

Guidance for various functions

This unit has user file and delete file functions in addition to various playback functions. Please read this section and familiarize yourself with this unit.

CONTINUE PLAY
You can start play from any track on any disc and play through to the final track on disc number 100.

ONE DISC PLAY
You can start play from any track on any disc and play through to the final track on that disc.

REPEAT
You can repeatedly play one track, one disc, an entire program, or all the discs loaded in the player unit. You can use this function also in the USER FILE mode.

RANDOM PLAY
You can have the unit select and play tracks at random from a specific disc or from among all the discs loaded. You can also have the unit play tracks at random from a set of discs grouped in a user file.

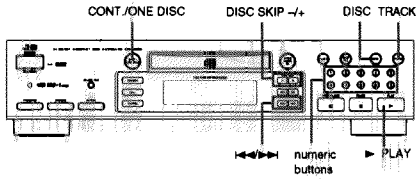
PROGRAM PLAY
You can program the unit to playback only certain tracks in any order from among all the discs in the unit.

USER FILE
You can group selected discs and play them continuously. (Except for the DISC PLUS 1)

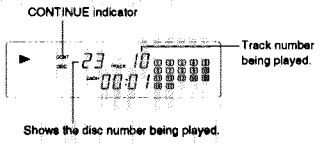
DELETE FILE
You can exclude certain tracks when playing back a disc by specifying the tracks to be deleted. (Only for tracks numbered 1-20) (Except for the DISC PLUS 1 and during the PROGRAM mode)

CONTINUE PLAY

In continuous playback mode you can start playback from any track on any disc and play all the remaining discs consecutively.



1. **Press the CONT./ONE DISC button so that the CONT. indicator lights in the display.**
2. **Use the DISC and numeric buttons (or the DISC SKIP –/+ buttons) to select the disc number containing the track you want to play.**
   If you want to start playback from the first track on the selected disc, skip to step 4.
3. **Use the TRACK and numeric buttons (or the skip I◄◄/►►I buttons) to select the track number from which you would like to start playback.**
   The selected track number appears on the display.



4. **Press the ► PLAY button on the control unit to start playback.**
   The unit plays back all of the remaining discs in consecutive order. Playback stops at disc number 100.

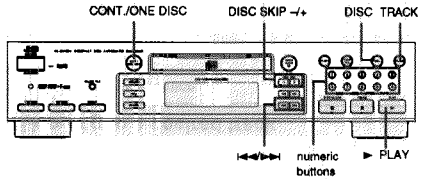
To stop playback
Press the ■ button.

When using the remote control unit
Press the CONT./ONE DISC button so that the CONT. indicator lights in the display. Use the DISC, TRACK and numeric buttons as described in steps 2 and 3 above to select the disc and track numbers, then press the TRANSFER button. The selected disc and track numbers indicate in the display on the control unit. Press the ► button to start playback.

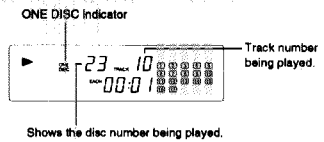
- If the disc and track numbers dissapear from the display on the control unit before you press the ► button, press the TRANSFER button again and then press the ► button.

ONE DISC PLAY

In one disc playback mode, you can start playback from any track on any disc and play through to the final track on that disc.



1. **Press the CONT./ONE DISC button so that the ONE DISC indicator lights in the display.**
2. **Use the DISC and numeric buttons (or the DISC SKIP –/+ buttons) to select the disc number containing the track you want to play.**
   If you want to start playback from the first track on the selected disc, skip to step 4.
3. **Use the TRACK and numeric buttons (or the skip I◄◄/►►I buttons) to select the track number from which you would like to start playback.**
   The selected track number appears on the display.



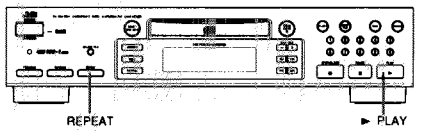
4. **Press the ► PLAY button on the control unit to start playback.**
   When the end of the disc is reached, playback stops automatically.

When using the remote control unit
Press the CONT./ONE DISC button so that the ONE DISC indicator lights in the display. Use the DISC, TRACK and numeric buttons as described in steps 2 and 3 above to select the disc and track numbers, then press the TRANSFER button. The selected disc and track numbers indicate in the display on the control unit. Press the ► button to start playback.

- If the disc and track numbers dissapear from the display on the control unit before you press the ► button, press the TRANSFER button again and then press the ► button.

REPEAT

With the repeat functions, you can play all discs, one disc, or just one track repeatedly.



Press the REPEAT button on the control unit or remote control unit during playback so that either the REPEAT or REPEAT 1 indicator lights in the display.

In CONTINUE mode
When the REPEAT indicator is lit, playback starts again with the PLUS 1 tray after all the discs in the player unit have finished playing.
When the REPEAT 1 indicator is lit, the current track is played repeatedly.

In ONE DISC mode
When the REPEAT indicator is lit, all tracks on the selected disc are played back repeatedly.
When the REPEAT 1 indicator is lit, the current track is played repeatedly.

In PROGRAM mode
When the REPEAT indicator is lit, the step in the program is played back repeatedly.
When the REPEAT 1 indicator is lit, the current step is played repeatedly.

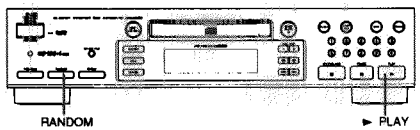
In USER FILE mode
When the REPEAT indicator is lit in CONTINUE mode, all tracks on all the discs in the selected user file are played back repeatedly.
When the REPEAT indicator is lit in ONE DISC mode, all tracks on the selected disc in the selected user file are played back repeatedly.
When the REPEAT 1 indicator is lit in either CONTINUE or ONE DISC mode, the current track is played repeatedly.

To stop repeat playback
Press the ■ button on the control unit or remote control unit.

To cancel repeat mode
Press the REPEAT button on the control unit or remote control unit so that the REPEAT indicator goes out.

RANDOM PLAY

In random mode, you can have the unit select and playback tracks in a random order.



1. **While in stop mode, press the RANDOM button on the control unit or remote control unit so that the RANDOM indicator lights in the display.**

2. **Press the ► PLAY button on the control unit or remote control unit to start playback.**

In CONTINUE mode
When you press the ► button on the control unit or remote control unit, the unit selects disc and track numbers for playback at random from among all of the discs loaded in the single disc tray or player unit.
If you press the REPEAT button to light the REPEAT 1 indicator, the current track can be played back repeatedly.

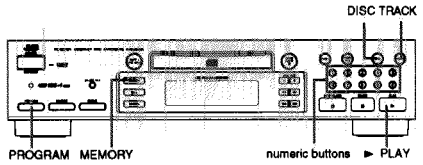
In ONE DISC mode
Select the disc you want to playback. When you press the ► button on the control unit or remote control unit, the unit selects tracks for playback at random from the specified disc. The unit enters stop mode when all the tracks on the specified disc have been played back once.
If you press the REPEAT button to light the REPEAT indicator, you can play all the tracks on the selected disc at random repeatedly.
If you press the REPEAT button to light the REPEAT 1 indicator, the current track can be played back repeatedly.

In USER FILE mode
In CONTINUE mode, when you press the ► button on the control unit or remote control unit, the unit selects disc and track numbers for playback at random from all the discs in the specified user file.
If you press the REPEAT button to light the REPEAT 1 indicator, the current track can be played back repeatedly.
In ONE DISC mode, if you press the REPEAT button to light the REPEAT indicator, you can play all the tracks on the selected disc at random repeatedly.
If you press the REPEAT button to light the REPEAT 1 indicator, the current track can be played back repeatedly.

To cancel random playback
Press the ■ button on the control unit or remote control unit.

PROGRAM PLAY

You can program up to 32 steps (tracks or discs) in any order from among all the discs in the control unit and player unit.



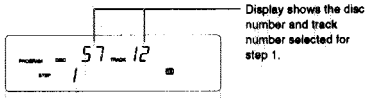
As an example, the following steps show how to program track number 12 on disc number 57 and track number 6 on disc number 32 respectively.

1. **In stop mode, press the PROGRAM button on the control unit or remote control unit so that the PROGRAM indicator lights in the display.**

2. **Use the DISC and numeric buttons to select the disc which contains the track to be programmed.**
"AL" (all tracks) appears on the display.

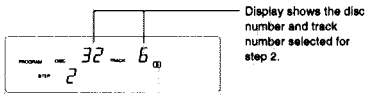
To program the entire disc
Skip to step 4. If you do not specify the track number after selecting a disc, all the tracks on the displayed disc are programmed.
(Be sure to press the TRANSFER button if you are using the remote control unit.)

3. **Select the track number with the TRACK and numeric buttons (Be sure to press the TRANSFER button if you are using the remote control unit.)**
If you want to cancel the displayed program step, press the CANCEL button and then enter a new disc number and/or track number.



4. **Press the MEMORY button on the control unit or remote control unit.**
The first track is programmed as step 1.

5. **Select the disc number and track number to be programmed for step 2. (Be sure to press the TRANSFER button if you are using the remote control unit.)**
In this example, press the DISC button, the 3 button and then the 2 button. Next, press the TRACK button followed by the 6 button. (Then press the TRANSFER button if you are using the remote.)
The following display appears.



Press the MEMORY button after selecting the track.

6. **Repeat steps 2 to 4 for other tracks and/or discs you wish to program.**

7. **Press the ► PLAY button on the control unit or the ► button on the remote control unit to start program play.**
The programmed tracks and/or discs are played in the programmed order.
- You can skip to other program steps during playback by using the I◄◄/►►I buttons.

To check the program contents
Press the CALL button while in stop mode. The programmed contents are displayed one by one in the programmed order each time you press the CALL button.
- When the unit is in program play mode, press the ■ button to enter stop mode before operating the CALL button.

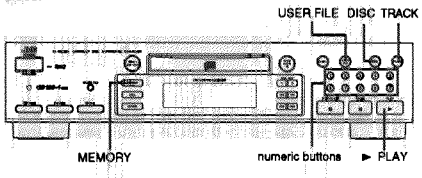
To modify the program contents
Press the CALL button repeatedly until the display shows the program step you wish to correct. Then enter the new disc number and/or track number referring to steps 2, 3 and 4 above.
To add a new step to the end of the program, press the CALL button, wait for the step number display to stop flashing, and enter the disc number and/or track number information referring to steps 2, 3, and 4 above.
To delete a program step, press the CALL button until the display shows the program step to be deleted and then press the CANCEL button. You can also delete the currently displayed program step during programming.
- When the unit is in program play mode, press the ■ button on the control unit or remote control unit to enter stop mode before deleting a program step.
- If you program a disc number for a tray without a disc, that step is automatically erased.

To exit program mode
Press the PROGRAM button. The program contents are not erased. Whenever you select the program mode with the PROGRAM button, you can play the tracks in the previously programmed order.
When the power of the unit is turned off and the unit enters STANDBY mode, the program contents are stored. When the power is turned on again, the unit re-enters the program mode. Press the ► button to start program playback from step 1.

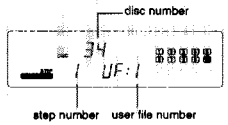
To clear an entire program
Press the ■ STOP/CLEAR button on the control unit while in program stop mode. The program contents will be cleared, but the program mode is not cancelled.

USER FILE (except for DISC PLUS 1)

User file lets you create a group discs from the player unit and play them back in the programmed or the random order. You can create up to 10 different user files, each containing up to 32 discs.



1. **Press the USER FILE button on the control unit or the USER FILE ON/OFF button on the remote control unit during stop mode so that the USER FILE indicator lights in the display.**
2. **Select a user file number (1 - 10) by pressing the numeric buttons on the control unit or the USER FILE NO.CALL button on the remote control unit.**
   To enter user file number 10, press the "0" button.
3. **Use the DISC and numeric buttons to select a disc you want to store in the user file. (Be sure to press the TRANSFER button if you are using the remote control unit.)**



4. **Press the MEMORY button.**
5. **Repeat steps 3 and 4 to program other discs.**
6. **Press the ► PLAY button on the control unit or the ► button on the remote control unit to start playback.**
   Playback starts from the currently displayed disc number. To start playback from a specific disc, press the DISC SKIP – or + button until the disc number you want to play appears in the display, then press the ► button.

To check the user file contents

Press the numeric buttons on the control unit or the USER FILE NO.CALL button on the remote control unit repeatedly so that the user file number you desire appears on the display.
Each time you press the CALL button on the control unit or the remote control unit is pressed, a program step is displayed in the programmed order. You can start playback by pressing the ► PLAY button on the control unit or the ► button on the remote control unit.

To modify the user file contents

Press the numeric buttons on the control unit or the USER FILE NO. CALL button on the remote control unit repeatedly so that the user file number you desire appears on the display.
Then press the CALL button on the control unit or the remote control unit repeatedly until the display shows the user file contents you wish to correct, and then enter a new disc number referring to steps 3 and 4.
To add a new step to the end of the user file, press the CALL button, wait for the step number display to stop flashing, and enter the disc number information referring to steps 2 and 3.
To delete a program step, press the CALL button repeatedly until the display shows the program step you wish to delete, and then press the CANCEL button.

To exit user file mode

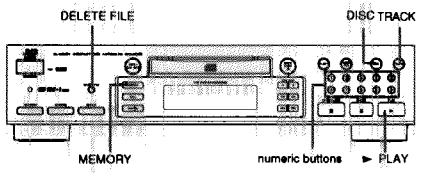
Press the USER FILE button on the control unit or press the USER FILE ON/OFF button on the remote control unit so that the USER FILE indicator goes out.
Even when the power of the unit is turned off and the unit enters STANDBY mode, the user file contents are kept and, upon the power-on, unit re-enters the user file mode.

Once you made a user file

Whenever the user file mode is selected with the USER FILE button, you can play the programmed discs. You can select the file you want from among the 10 user files by pressing the USER FILE NO. CALL button. Press the ► button to resume playback from the last step played before turning the power off.

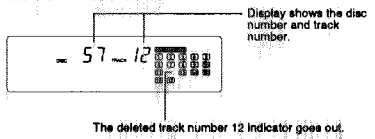
DELETE FILE (except for DISC PLUS 1 and RANDOM)

With delete file, you can specify undesired tracks and then play only the remaining tracks. You can use this function for with tracks 1-20 on each disc.

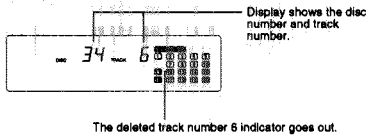


As an example, the following steps show how to delete track number 12 on disc number 57 and track number 6 on disc number 34.

1. **Press the DELETE FILE button on the control unit or remote control unit during stop mode so that the DELETE FILE indicator lights in the display.**
2. **Use the DISC and numeric buttons to select the disc number containing the track to be deleted.**
3. **Select the track number by using the TRACK and numeric buttons. (Be sure to press the TRANSFER button if you are using the remote control unit.)**
4. **Press the MEMORY button.**



5. **Select the next disc and the track number you wish to delete. (Be sure to press the TRANSFER button if you are using the remote control unit.)**
   For this example, press the DISC button, the 3 button and then the 4 button. Then press the TRACK button and the 6 button.
   After selecting the track, press the MEMORY button. The following display appears.



6. **Repeat steps 2 to 4 for other tracks or discs you wish to delete.**
7. **Press the ► PLAY button on the control unit or the ► button on the remote control unit.**
   All tracks other than deleted tracks and/or discs are played in consecutive order.
   - You can skip to any other track, except the deleted tracks, with the ⏮ or ⏭ (skip) buttons.

To modify the delete file contents

Using the DISC button, the TRACK button and the numeric buttons, select the disc number and track number to be released from the delete file and then press the CANCEL button.

- When the unit is in delete program play mode, press the ■ STOP/CLEAR button to enter stop mode before releasing the delete file.

To cancel delete file mode

Press the DELETE FILE button in stop mode.

Note

Release the delete file contents when you switch the disc.

DISC TITLE MEMORY BANK

Can you remember the titles of all the discs in the unit? Since you can store up to 300 discs (if you connect additional player units) you may find it difficult to remember which discs are stored in which tray of which unit. To solve this problem, we incorporated a disc title memory function into the remote control unit.
Once disc titles and disc tray numbers are stored in the remote control unit's disc title memory bank, you can easily find out which disc tray contains the disc you desire.
You can also title the user files.

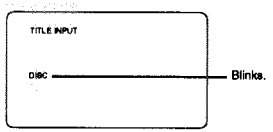
Keep the following in mind when using the disc title memory bank.

- **Disc title input**
  Enter the disc tray number 1- 100 (1 - 300 with the XL-MCM1), and then enter the corresponding disc title.
- **Disc search - When you know the disc title but not the location.**
  You can find the disc tray number of any disc by specifying one or more letters of the disc title. You can specify as many letters as you desire, starting from the first letter.
- **User File Title Search**
  You can display user file titles by entering the user file number.
- **User File Title Input**
  Enter the user file numbers (1-10), and then enter the corresponding user file title.

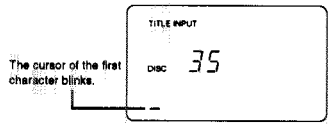
TITLE INPUT (except for DISC PLUS 1)

To utilize the disc title memory bank function, it is necessary to input the disc tray number 1 - 100 (1 - 300 with the additional units) and the corresponding disc title beforehand. Up to 8 characters (including digits) can be used for each disc title.

1. Press the DISC TITLE INPUT button.
The unit enters title input mode and the TITLE INPUT indicator lights in the remote control unit's display. To input the title for the user files, press the USER FILE ON/OFF button after pressing the DISC TITLE INPUT button.



2. Specify the disc tray number 1- 100 (1 - 300 with the additional units) with the numeric buttons, then press the ENTER button. The DISC SKIP buttons can also be used to specify the disc number.
For user files, specify the file number (1 - 10) with the numeric buttons or the USER FILE NO.CALL buttons. (To enter user file number 10, press the "0"button.)
If the disc or user file number already has a title, it appears in the display on the remote control unit.



3. Specify the disc title by using the letter or numeric buttons. After choosing a character or number, use the → button to move the cursor. Press the ENTER button after the entry is completed.

Each time the button is pressed, the character in the display changes as follows:

→A →B →C

If you want to choose a number, press the corresponding numeric button. If you want a space, press the ␣ button.

To correct a character, use the ← or → button to move the cursor to the character to be corrected and input a new character.

4. To enter a title for another disc tray, press the DISC button, then repeat steps 2 and 3.
To enter a title for another user file, press USER FILE ON/OFF, then repeat steps 2 and 3.

To play the disc whose title was just stored
Press the TRANSFER button and then the ► button.

To correct a disc title
Use the DISC and numeric buttons or the DISC SKIP buttons followed by the ENTER button so that the disc title you want to correct appears in the display. Move the cursor to the character to be corrected by using the ← or → buttons, then input the new character. After correcting the disc title, be sure to press the ENTER button.

To delete a disc title
Use the DISC and numeric buttons or the DISC SKIP buttons followed by the ENTER button so that the disc title to be deleted appears on the display, then press the CANCEL button. The disc title goes out. Be sure to press the ENTER button.

To exit title input mode
Press the TITLE INPUT button again. The whole display goes out and the title input mode is cancelled.

DISC SEARCH

You can search for a disc tray number by specifying one or more of the characters in the disc title.

1. Press the DISC TITLE SEARCH button.
The unit enters disc search mode and the DISC SEARCH indicator lights in the display.

The cursor blinks for the first character.

2. Specify one or more letters of the disc title (starting from the first letter) and press the ENTER button.
You do not have to input the entire disc title. The unit searches for disc titles starting with the same first few characters, starting from disc tray number 1.

3. If the title displayed is not the one you are looking for, press the DISC SKIP button until the desired title appears in the display.

To play the disc whose disc number is displayed
Press the TRANSFER button and then the ► button.

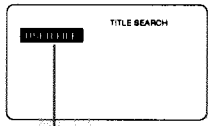
To exit disc search mode
Press the DISC TITLE SEARCH button again. The whole display goes out and disc address search mode is cancelled.

USER FILE TITLE SEARCH

You can identify user files by their titles.

1. Press the USER FILE TITLE SEARCH button.
The unit enters disc search mode and the DISC SEARCH indicator lights in the display.

2. Press the USER FILE ON/OFF button.



Blinks in the display.

3. Use either the numeric buttons or the USER FILE NO. CALL button to select a user file. (To enter user file number 10, press the "0"button.)
The title appears in the display automatically.

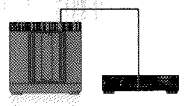
4. To see the title for a different user file, use either the numeric buttons or the USER FILE NO. CALL button.

To exit the USER FILE TITLE search mode
Press the USER FILE SEARCH button again. The whole display goes out and disc address search mode is cancelled.

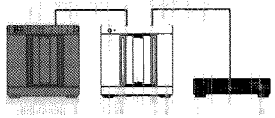
300 disc playback

You can enjoy all of the functions listed in this instruction with up to 300 CDs by adding optional XL-MCM1 units (sold separately). The operation is the same after setting the DSIC SW on the back of the additional XL-MCM1 according to the number of the discs, 101-200 or 201-300.

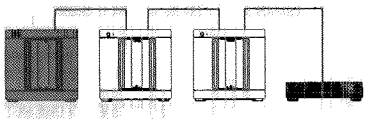
XL-MC301C and XL-MC301M ➡ 101 disc playback
XL-MC302C XL-MC302M



Adding one XL-MCM1 unit ➡ Up to 201 disc playback



Adding two XL-MCM1 units ➡ Up to 301 disc playback



COMPU LINK remote control system

The COMPU LINK Remote Control System controls relative operations between components automatically and facilitates various operations.

COMPU LINK Remote Control System

This is a system originated and developed by JVC for facilitating various system operations.
The following is a brief explanation of this system:

Automatic source selection
When you use the provided COMPU LINK cord to connect this unit to other JVC products equipped with COMPU LINK jacks, you can switch system components with a the touch of a button.
One touch of the source selector button on a JVC amplifier or receiver starts operation of the selected component automatically.
Likewise, when you press the play button on one of the system components, the source selector on the amplifier or receiver changes automatically and the previously selected component stops operation within five seconds.

Synchronized recording
Synchronized recording refers to the process in which a JVC cassette deck starts recording, synchronized with this unit. Synchronized recording is carried out as follows:

1. Set the cassette deck to the recording pause mode in accordance with its instructions.
2. To record only certain tracks, make a program of the tracks you desire.
3. Press the ► button on the front panel of this unit. The cassette deck automatically starts recording, synchronized with this unit.

Notes

- *Synchronized recording stops automatically when this unit stops playback.*
- *To cancel synchronized recording, press the ■ STOP button on this unit or on the cassette deck.*
- *Setting the recording pause mode by pressing the ▮▮ PAUSE button after pressing the ● REC and ► PLAY buttons simultaneously, synchronized recording will not be possible. For details, refer to the instructions for the cassette deck.*

Automatic power on/off function
This function controls the power of the receiver or amplifier or the power of this unit in the following manner.

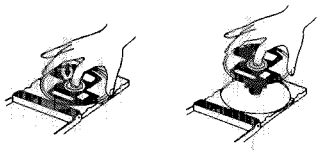
- When this unit enters playback mode, the receiver or amplifier turns on automatically.
- When the source selector of the receiver or amplifier is set to the CD function mode, this unit turns on automatically.

Notes

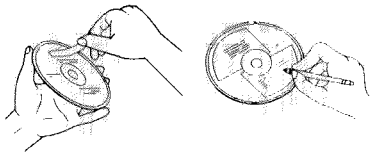
- *Abnormal operation will result if the power supply of the component(s) is interrupted. If this happens, you must start over again.*
- *Be sure that the COMPU LINK jacks of the individual components are connected with the provided COMPU LINK cord. Also, be sure to fully read the instructions for each component.*

Care and handling

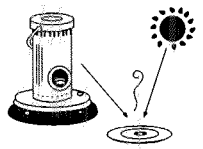
How to handle CDs
When handling compact discs, do not touch the bottom (reflective silver side - the side without the label) of the disc.
Since compact discs are made of plastic, they are easily damaged. If the disc gets dirty, dusty, scratched or warped, the sound will not be picked up correctly and, may cause the CD player to malfunction.



Even on the label side
Do not damage the label side, stick paper to or use adhesive on this surface.

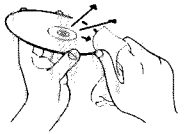


Storage
Make sure to keep discs in their cases. If discs are piled one on top of another without their protective cases, they can be damaged.
Do not put discs in a location where they will be exposed to direct sunlight - or in any place with high temperature or humidity. Avoid leaving discs in your car!



Maintenance of discs

- When there are fingerprints or other dirt adhering to a disc, use a soft, dry cloth, and wipe the disc in a straight line starting from the inside and moving outwards.
- If difficult to clean, wipe the disc with a cloth moistened with water.
- Never use record cleaners, petrol, alcohol or any anti-static agents.



TROUBLESHOOTING

What appears to be a malfunction may not always be serious. Please go through the following list before requesting service.

Symptom	Possible cause	Remedy
A track on a CD is not played.	The CD is missing.	Load the CD.
	The CD is loaded upside-down.	Load the CD with its label-side up on the disc tray or in the magazine.
	The disc tray is inserted skewed.	Insert it horizontally.
	The audio cord is disconnected.	Connect the cord firmly.
	The CD is scratched.	Replace the disc with a new one.
	The front door of the player unit was left open.	Close the door.
	The transport lock knob is locked for transportation.	Disconnect the AC power cords of both control and player units, turn the knob on the rear panel of the player unit to the RELEASE position, then reconnect the AC power cords.
	The control/signal cord is disconnected.	Disconnect the AC power cords of both control unit and player unit, and connect the control/signal cord firmly, then reconnect the AC power cords.
Programming is not possible.	The program indicator does not light.	Press the PROGRAM button to activate the program mode.
	The control/signal cord is disconnected.	Disconnect the AC power cords of both control unit and player unit, connect the control/signal cord firmly and reconnect the AC power cords.
The sound is intermittent or harsh.	The disc is dirty.	Wipe off the disc surface with a soft cloth.
	The disc is scratched.	Replace the disc with a new one.
	The disc is warped.	Replace the disc with a new one.
	Paper or adhesive tape is stuck to the disc.	Remove it completely.
	The control/signal or audio cord is too close to the AC power cord.	Move them away from the AC power cord.
Remote control unit cannot be operated.	The batteries are exhausted.	Replace the batteries with new ones.
	The front door of the player unit is open.	Close the door.
	The remote control unit is not pointed at the remote sensor.	Point the remote control unit at the remote sensor.
	The control/signal cord is disconnected.	Disconnect the AC power cords of both control unit and player unit, connect the control/signal cord firmly and reconnect the AC power cords.
Playback will not stop.	The control/signal cord became disconnected during playback.	See above.
Operation is not possible.	The built-in micro-computer may not function properly in static electricity or lightning storms.	Disconnect the AC power cords of both control unit and player unit once, then reconnect them.
You cannot operate the XL-MCM1.	The DISC SW is not set to the correct position.	Unplug the power cord and set the DSIC SW to the proper position.

SPECIFICATIONS

General

System:		Compact disc digital audio system
Signal detection system:		Non-contact optical detection system
CD capacity:		100 + 1 discs
Power requirement:		AC 120 V ~, 60Hz
Power consumption:	XL-MC301C	14 watts
	XL-MC301M	14 watts
Dimensions (W x H x D):		
XL-MC302C XL-MC301C		435 x 103 x 280.5 mm
		17-1/8 x 4 - 1/16 x 11 - 1/16 inches
XL-MC302M XL-MC301M		360 x 366 x 376.1 mm
		14-3/16 x 14 -7/16 x 14-13/16 inches
Mass:		
XL-MC302C XL-MC301C		3.5 kg
		7.7 lbs
XL-MC302M XL-MC301M		13.7 kg
		31 lbs

Audio performance

Frequency response:	2 Hz to 20,000 Hz
Dynamic range:	More than 99 dB at 1 kHz
Signal to noise ratio:	More than 107 dB
Channel separation:	More than 94 dB at 1 kHz
Total harmonic distortion:	Less than 0.0020% at 1 kHz
Wow and flutter:	Below the measurable limit
Analog output level:	2.0 Vrms at full scale

Accessories

- Remote control unit (RM-SXMC301U) 1
- Battery (R6P, AA) 2
- Complink cable (1 m) 1
- Control/Signal cord (3P) (2 m) 1
- Audio cord (stereo pin-plugs) (1 m) 1
- CD booklet 1
- AC power cord 1

Design and specifications subject to change without notice.

Technical instruction

1. Control communication between Controller and CDChanger.

The Changer section is controlled by Controller section via'Control Signal' cord. It will however rest itself when power is applied and the Open door swich pressed.

The control signal from the Controller is called TXD -the return status signal from the Changer is called RXD.

1) Controller side

When a disc function is selected by the remote controller or by the front panel controls on the XL-MC301C/302C -IC251the main System Controller interprets this instruction and outputs the relevant 8bit control signal by IC751(parallel to serial control interface)and output,from pin 19 as the serial control signal, TXD,through IC753,the Buffer circuit,to the Changer Unit.

At the player side this control signal is labeled 'C TO M'.It is bufferd and entered into pin 23 of IC201, the Mechanism Controller.IC201 will respond by moving the Elevator .5ms after receving the command the status of the mechanism will be sent from IC201 pin 22(M TO C) via IC702 to the Controller.

This serial data signal will be input to the Controllers interface IC751 pin 3 (RXD).The serial is converterd into parallel an output to the System Controller,IC251.

Depending on the selected disc #the height of the Elevator Mechanism is detected by the Photo Interrupter ,PH804.PH804 moves up and down with the Elevator Mechanism and detects the hight by detecting the slits in the disc rails. The Mechanism Controller counts tray levels and stops the Elevator Mechanism when it has reached the correct level.

The Loading moter them pulls the selected disc tray into the Elevator Mechanism .There are two columns of 50 discs. Disc 1 to 50 are on the left side and disc 51 to 100 are on the right side .When the disc selected is below 50 the Traverse Mechanism stays to the left side .If the disc selected is above #50 then the Traverse Feed Motor moves the Traverse Mechanism to the righ side.

2) Changer Section

Vertical Position detect

When a tray is removed from or being retuurned to a column location the vertical motor raises the Elevator Mechanism up and down ..The Photo interupter PH804 is mounted on the Elevator Mechanism .In the rest position light from the phototransistor is shown on the photo diode .As the transisitor are fed to pin 15(PHL)of the Mechanism level and the processor can therefore count the levels as it moves up and down..

EEROM Backup

When a disc is removed from the tray column the processor must remember where it was taken from.During nomal operation this location is stored in the Mechanism microprocessor IC201.

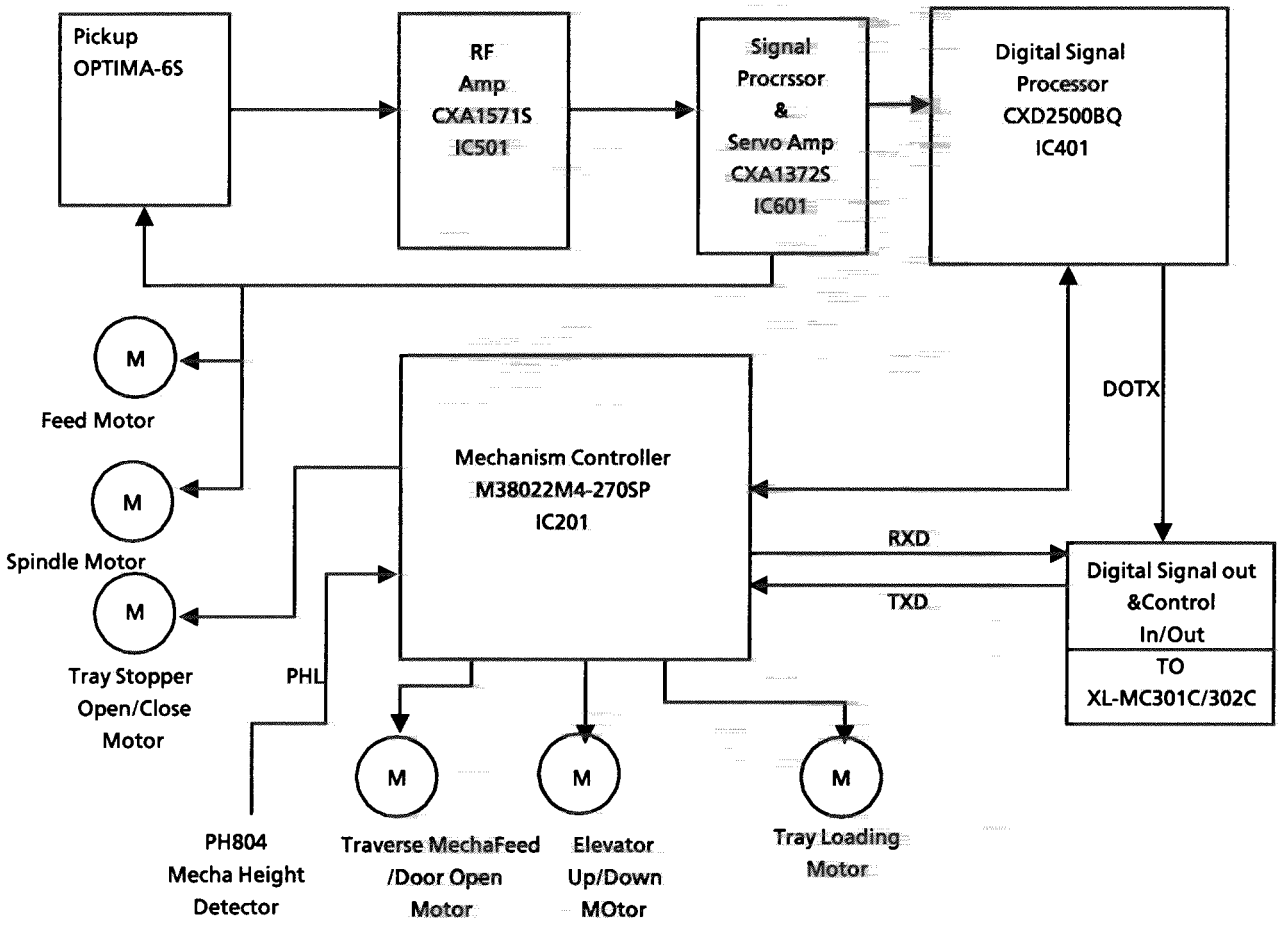
There are two conditions however where it is necessary to backup this tray location is external memory. During an emergency condition or if the power is removed when a disc has been removed from a tray column the location is stored in the EEROM,IC202.

In an emergency condition , the microprocessor will retry the function it is performing until it times out.At this time the data representing the tray location is output from pin 37(SDA)to the EEROM chip ,pin5.

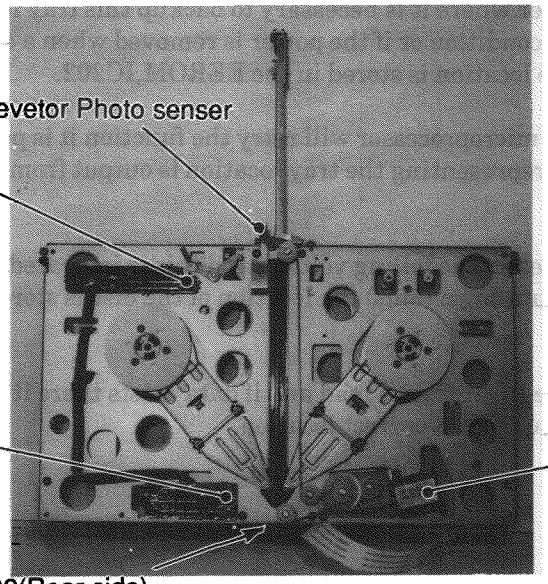
If the power is removed IC203 detect the folling voltage and this is indicated to pin 28 of IC201 (OFFDET).Before the power shuts down (5ms) the location of the disc is stored in the EEROM.IC202.

When the unit is powered on the ROM is first read and if data exists there it is interpreted and the disc in the mechanism is returned its correct location.

■ Composition of the XL-MC301M/MC302M



■ Position of switch and motor



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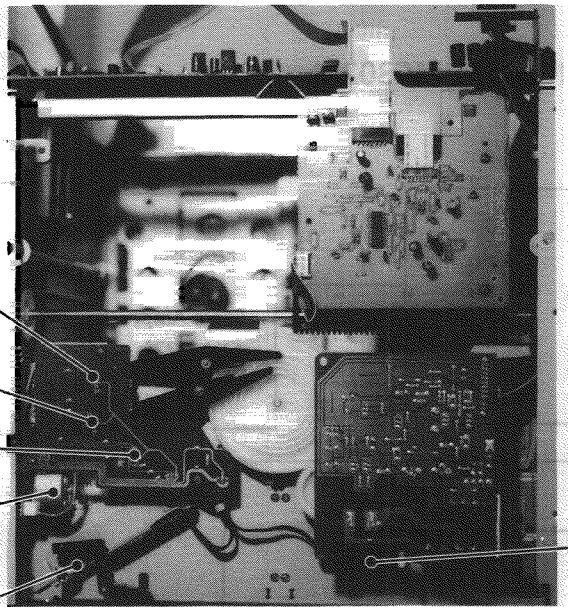
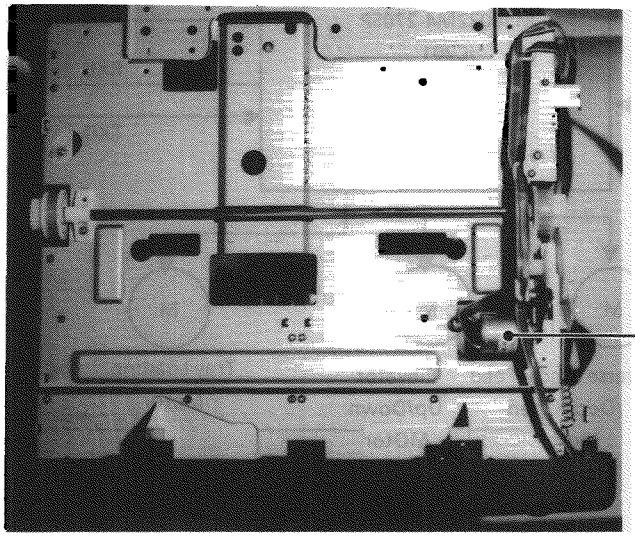


Bottom View

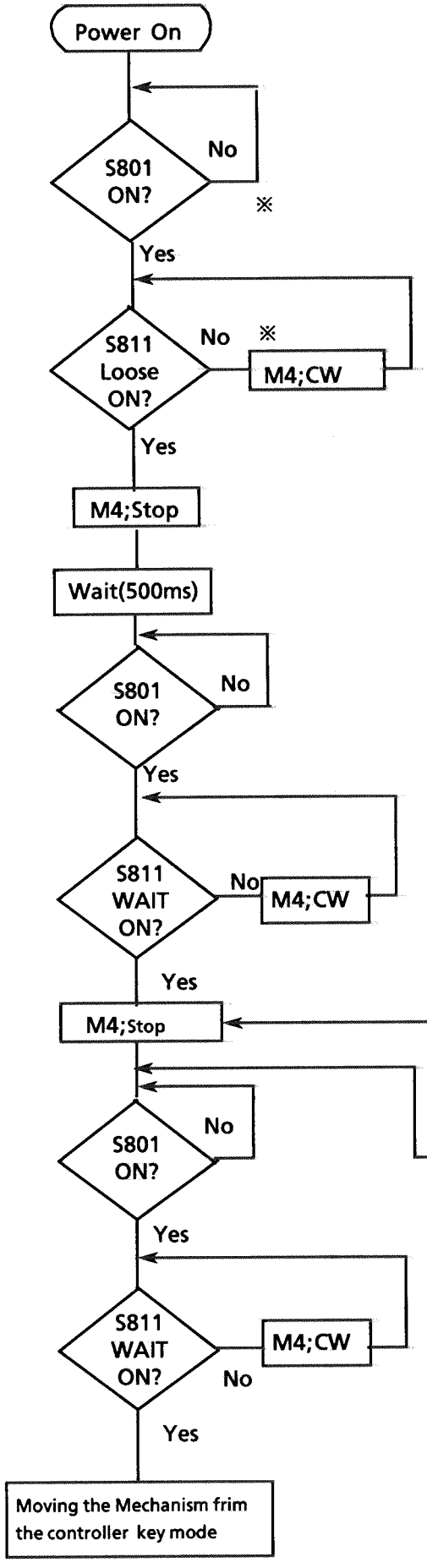


Top View

Operation of each switch and senser(XL-MC301M/302M)

SW Name	Symbol	A Part of SW	Pin No of Mecha controlemicon (IC201)	Opration Mode	Motor
Door SW	S801	For detecting the door opened or closed. The switch is turned on when the door is closed.	24pin	Door close SW : ON 'L'	
Rest position detect SW	S802	For detecting the elevator is at the rest position.The switch is turned on when the elevator is at the rest position.	16pin	Rest position SW:ON 'L'	M1
Door lock senser SW	S811	Pin1 of P812 is on when the base is opened.	LOOSE side 45pin WAIT side 46pin	→ Door unlock : ON 'L' → Door lock :ON 'L'	M4
Tray stopper open /close SW	S805	When the tray stopper is closed,pin 6 of P812 is on.When the tray stopper is opened,pin 5 of P812 is on.	T.CLOSE side 43pin T.OPEN side 44pin	→ L→H :CLOSE → L→H :OPEN	M2
Tray loading SW	S807	The switch is on turned on when a tray is loaded.	25pin	Finish load SW : ON 'L'	M3
Pick up position detect SW	S808	Pin 4 of P812 is on when the traverse mechanism is at the right.Pin 3 of P812 is on when the traverse mechanism is at the left.	PU.R 40pin PU.L 41pin	→ Righ side :ON 'L' → Left side :ON 'L'	M4
Tray JAB SW	S810	The switch is turned on when a tray is returned into the holder.	29pin	Return a tray to holder SW : ON 'L'	M3
Photo senser	PH804	The height of the elevator is detect by the senser.	15pin	Count of PHL	

■ Frowchart of starting mechanism



※ S801 and S811 are checked when the elevator moves, the power is turned on or before a disc is played. The door is kept closed during the mech. operation.

※ S811 is switched to LOOSE only when the door is opened and M4 becomes PWM(Pulse Drive). Generally, S811 is switched to WAIT. (The mode does not go ahead if it is not WAIT.)

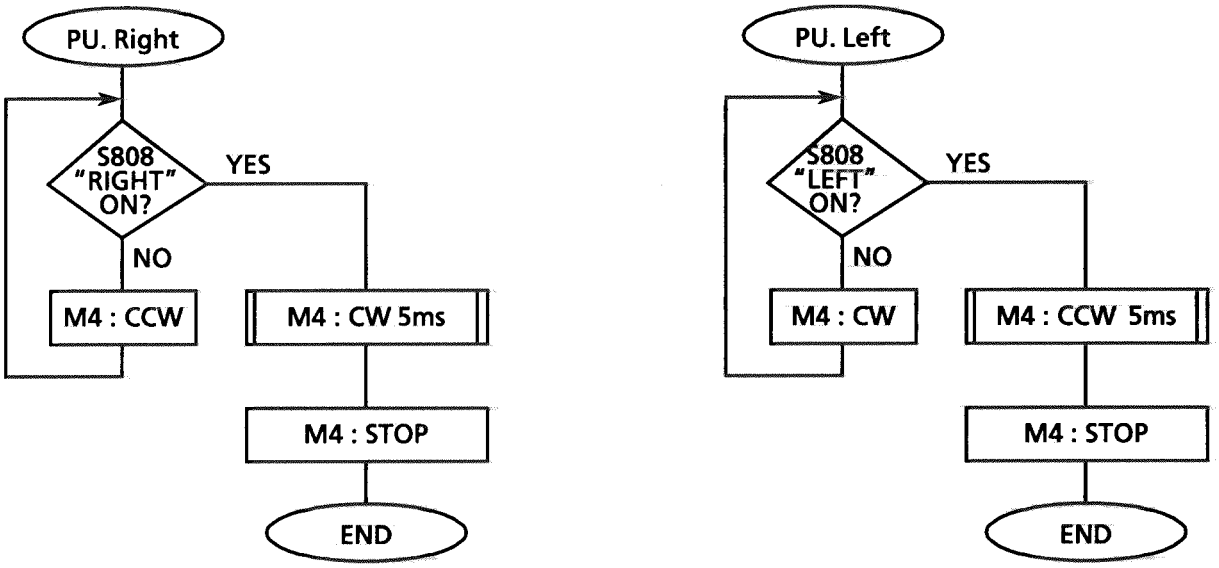
CW: Clockwise
CCW: Counterclockwise
CD: Current disc number
TD: Target disc number
PHL: Slit detector
Situation in the broken line means that loweredge signal occurs in the stop mode

■ Operation of the Mechanism

Traverse Mechanism Movement

When a disc is selected the Loading motor them pulls the selected disc tray is to the Traverse Mechanism.There are two columns of 50 disc. Viewing from the front Disc 1 to 50 are on the left side and 51 to 100 are on the right side. The normal 'rest ' position for the Traverse Mechanism is the right side.
When the disc selected is above disc #50 the Traverse Mechanism stays at right side. When the disc selected is below disc #50 the Traverse Mechanism moves to the left side. The Traverse Feed Motor moved the Traverse Mechanism.

The traverse position detect switch ,S808, detects the position of the PU ass'y. This status is indicated to IC201, the Mechanism Microprocessor. The switch can be closed in one direction or the other by the SWITCH LEVER which moves when the mechanism switches from L to R or R to L. The switch lever is pushed when the main gear spins with the movement of the Traverse Mechanism .Relevant pin is pulled low(40:PU .R,41:PU.L)



◦ Traverse movement (Time out 6second)

Elevator Mechanism Movement

The disc # and rail slit are synchronized so that the photosenser, PH804 can detect the elevator movement by counting the slits and incrementing or decrementing the disc level count. When the Elevator is moving the PHL signal is input to pin 15 of the Mechanism Controller,IC201.

The operation to move the elevator depends on where the target disc is in relation to the vertical 'current'position.

The 'current'position is compared with the selected disc position.With the Elevator at the 'current'position and the desired disc is less than 5levels above the 'current'position-the Elevator is driven by a pulsed signal.

With the Elevator at the 'current'position and the desired disc is more than 5 levels above the 'current'position -the Elevator is driven by a DC voltage until it is 5 levels from the target.It is then driven by pulsed signal.

The output from the slit detector is monitored after the 'rest'switch is opened to determine that the elevator stops at the correct target level.

Tray Stopper Open/Close Movement

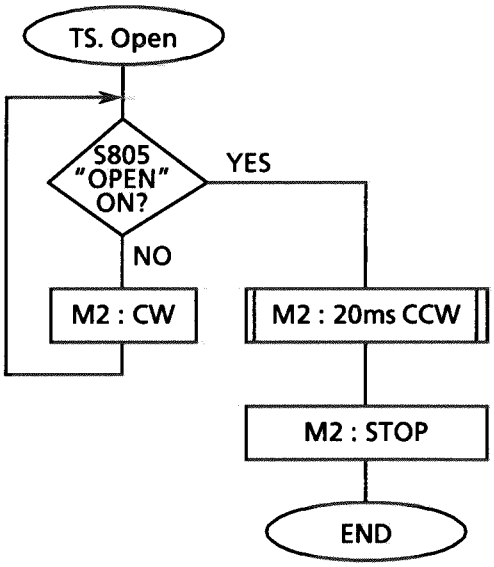
Normally the Tray Stopper is locked to prevent discs comming out of the tray rails because of external shock . It will release and open duiring tray load and return.

S805 the Tray Stopper open/close detect switch detects whether the Tray Stopper is open or closed.

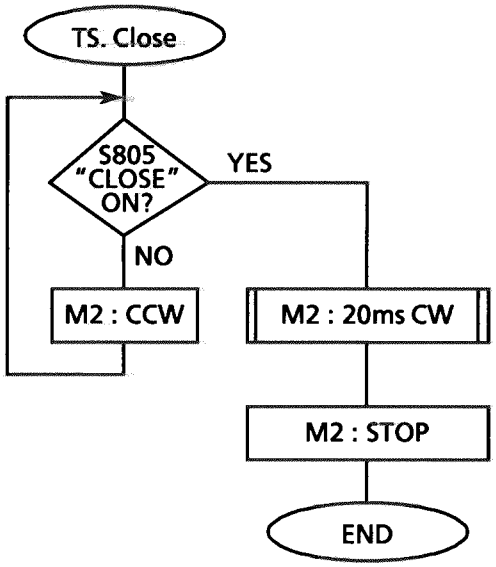
Tray Stopper open
The Tray Stopper will open when a disc is being returned to its column rail . or when a disc has been selected for play. When the Elevator moves to the correct level pin 61 (TYS O)output the tray Stopper Open signal to drive the Tray Stopper motor(M2). It outputs this drive signal for 180ms to open the Stopper . Unloding /loding is then completed.

Tray Stopper Close
Tray finished loading /unloading IC201 pin 60 (TYSC)outputs the drive signal to the Tray Stopper motor ,M2,(6.6V)for 180ms to close the Tray Stopper.

◦ Tray Stopper Open



◦ Tray Stopper Close



Loading Movement

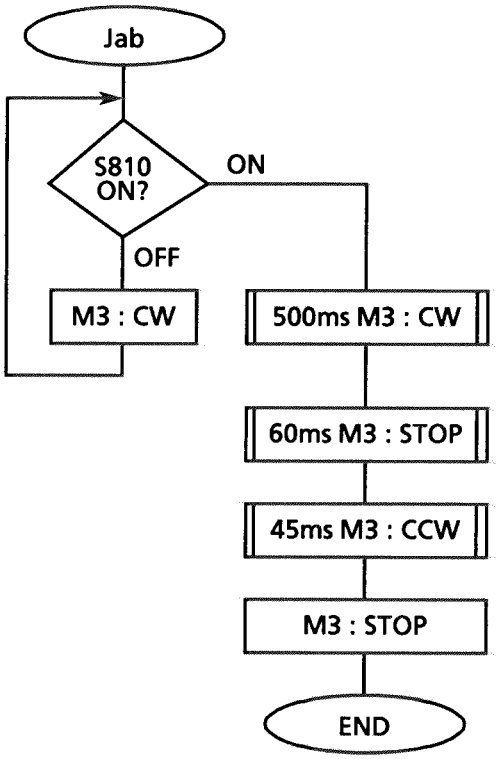
When the movement of the Traverse Mecha is finished -Next movement is the loading movement.Loading simultaneously happens for both trays(L&R).When a tray is loaded the LOAD switch , S807 is closed.

When the tray is pulled into the elevtor ass'y,the Elevator then moves down to the rest position until S802,the Rest switch ,is closed.The clamper ass'y is pushed down to clamp the disc on the Traverse Mechanism turntable..

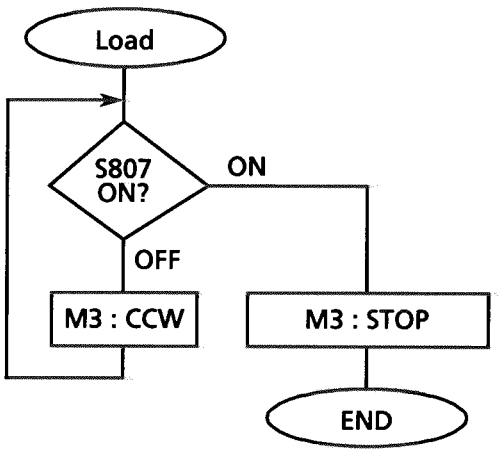
Unloading Movement

When a tray is being returned to its disc position the elevator moves up to the level which has been memorized in IC201 by the PHL input signal .When the correct level is reached the loading/unloding motor is driven until the Jab switch ,S810, is closed ,pulling pin 29 of IC201 low,to indicate that the tray the has been completly returned .The motor continues to drive for 500ms and than stops.

◦ Jab (When the tray is returned from the elevator to the tray holder)



◦ Load (When the tray is load from to the tray holder the elevator)



-MEMO-

XL-MC301C

— Contents —

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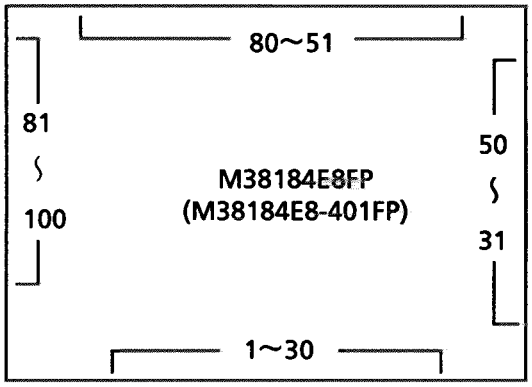
Description of Major LSIs

■ M38184E8FP (IC251) : CD SYSTEM CONTROLLER

1. Terminal Layout



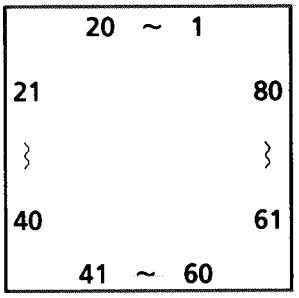
M38184E8-401FP is One time micon

2. Pin Functions Description

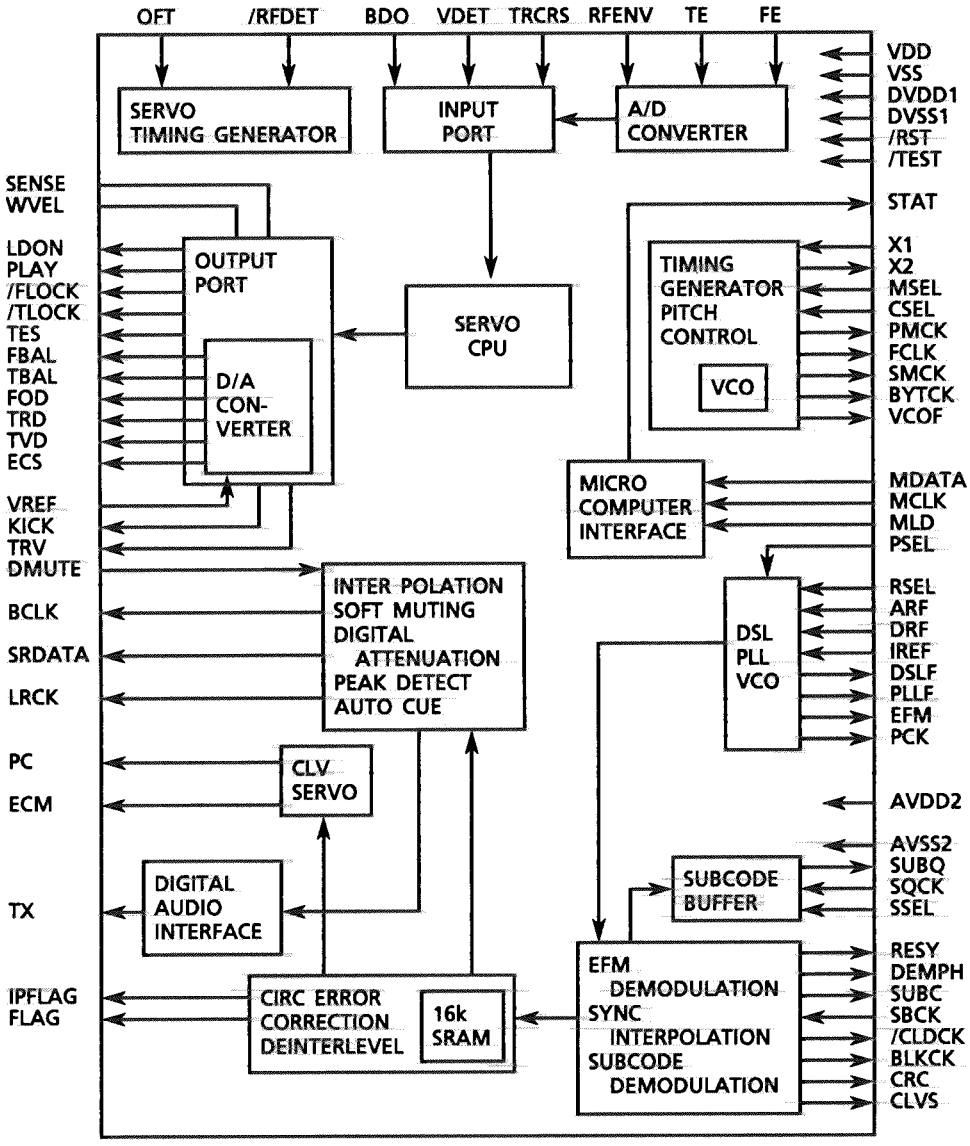
Pin NO.	symbol	I/O	Function	Pin NO.	symbol	I/O	Function
1~2	D0,D1	I/O	Data signal input and output	31	NC	--	Non connect
3	$\overline{CS}$	O	Chip select signal to IC751	32	RXRDY	I	Receiver ready
4	C/D	O	Control/Data output to IC751	33	RMIN	I	Accepts remote control signal
5	W/R	O	Write signal output	34	PCWDET	I	Power on detect
6	RD	O	Read signal output	35	RESET	I	Reset signal input
9	$\overline{TLOCK}$	I	Lock signal for traking	36	XCIN	--	+9V
10	$\overline{FLOCK}$	I	Lock signal for focus	37	XCOUT	--	Non connect
12	MLD	O	D.Servo command clock signal output	38	XIN	I	Input to 4.91MHz Xtal oscillation
13	MCLK	O	D.Servo command data signal output	39	XOUT	O	Clock output
14	SUBQ	I	Input Q-data of subcode	40	Vss	--	Connect to GND
15	SQCK	O	Clock output for Q-resistor	41~43	NC	--	Non connect
16	STATAS	I	STATUS signal input	44~48	KI0~KI4	I	Key matrix input
17	SENSE	I	Sense signal input	49	CLOSE SW	I	Tray close SW input
18	TX.SEL	O	Signal select to the PI and XL-MC301M/MCM1	50	OPEN SW	I	Tray open SW input
19	$\overline{ERROR}$	I	Monitor to thr DIR of ERROR terminal	51	REST SW	I	Pickup rest SW input
20	LSI.RST	O	Lsi reset signal output	52~56	NC	--	Non connect
21	$\overline{P.ON}$	O	L:Power ON H:Power OFF	57~67	1G~11G	O	FL grrid control output
22	MUTE	O	A.Mute control signal	68~81	S1~S14	O	FL segment control output
23	RMOK	O	STANBY indication signal	82~88	NC	--	Non connect
24	DMUTE	O	Lsi mute output	89	VEE	--	-Vdisp
25	OPEN	O	Tray oren signal output	90	NC	--	Bu+5V
26	CLOSE	O	Tray close signal output	91	VCC	--	Connect to GND
27	NC	--	Non connect	92	NC	--	Non connect
28	RXOOUT	O	Receiver clock	93	AVSS	--	Connect to GND
29	RDCSOUT	O	DCS signal output	94	VREF	--	Bu+5V
30	DCSIN	I	DCS signal input	95~100	D2~D7	I/O	Data signal input and output

■ MN662720RB (IC451) : DIGITAL SERVO & DIGITAL SIGNAL PROCESSER

1. Terminal Layout



2. Block Diagram

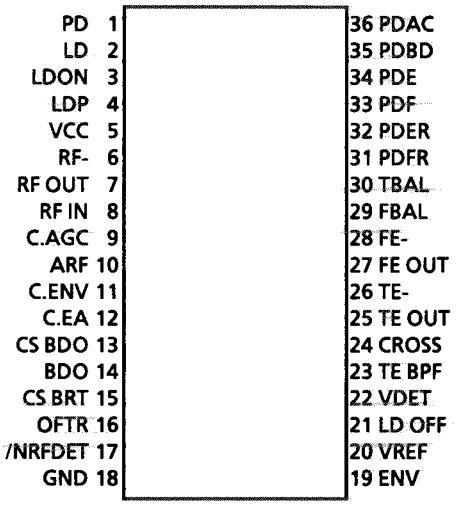


3. Description

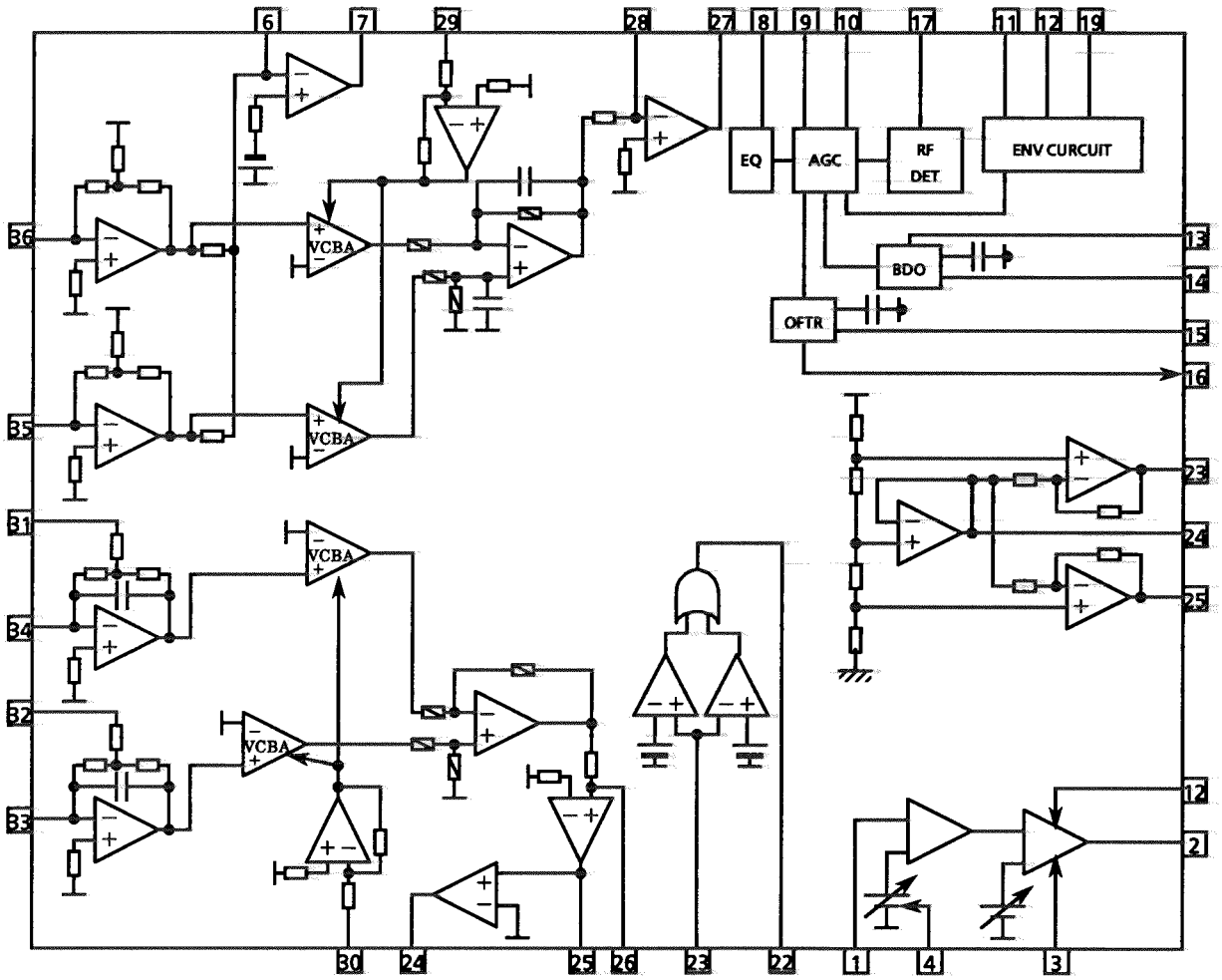
Pin No.	symbol	I/O	Description	Pin No.	symbol	I/O	Description
1	BCLK	O	Bit clock output pin for SRDATA	41	TES	—	Not used
2	LRCK	O	L/R distinction signal	42	PLAY	—	〃
3	SRDATA	O	Serial data output	43	WVEL	—	〃
4	DVDD1	—	Power supply	44	ARF	I	RF signal input
5	DVSS1	—	Connected to GND	45	IREF	I	Reference current input pin
6	TX	O	Digital audio interface signal	46	DRF	I	Bias adjustment pin for DSL
7	MCLK	I	μ-com command clock signal input	47	DSLF	I/O	Loop filter pin for DSL
8	MDATA	I	μ-com command data input	48	PLLF	I/O	Loop filter pin for PLL
9	MLD	I	μ-com command load signal input	49	VCOF	—	Not used
10	SENSE	O	Sense signal output	50	AVDD2	—	Power supply
11	FLOCK	O	Lock signal for Tracking	51	AVSS2	—	Connected to GND
12	TLOCK	O	Lock signal for Focus	52	EFM	—	Not used
13	BLKCK	—	Not used	53	PCK	—	〃
14	SQCK	I	Clock for sub-code Q resister	54	PDO	—	〃
15	SUBQ	O	Sub-code Q-code output	55	SUBC	—	〃
16	DMUTE	I	Muting input (H : MUTE)	56	SBCK	—	Connected to GND
17	STATUS	O	Status signal	57	VSS	—	〃
18	/RST	I	Reset signal input (L:Reset)	58	X1	I	Input of 16.9344MHz X'tal oscillation circuit
19	SMCK	—	Not used	59	X2	—	Not used
20	PMCK	—	Not used	60	VDD	—	Power supply
21	TRV	O	Traverse enforced output	61	BYTCK	—	Not used
22	TVD	O	Traverse drive output	62	CLDCK	—	〃
23	PC	—	Not used	63	FCLK	—	〃
24	ECM	O	Spindle motor drive signal (Enforced output) 3-State	64	IPFLAG	—	〃
25	ECS	O	Spindle motor drive signal (Servo signal)	65	FLAG	—	〃
26	KICK	O	Kick pulse output	66	CLVS	—	〃
27	TRD	O	Tracking drive output	67	CRC	—	〃
28	FOD	O	Focus drive output	68	DEMPH	O	De-emphasis ON signal (H : ON)
29	VREF	I	Reference voltage input pin	69	RESY	—	Not used
30	FBAL	O	Focus Balance adjust signal output	70	NC1	—	Connected to GND
31	TBAL	O	Tracking Balance adjust signal output	71	/TEST	—	Pull up (+5V)
32	FE	I	Focus error signal input	72	AVDD1	—	Power supply
33	TE	I	Tracking error signal input	73	NC2	—	Not used
34	RF ENV	I	RF envelope signal input	74	AVSS1	—	Connected to GND
35	VDET	I	Vibration detect signal input	75	NC3	—	Not used
36	OFT	I	Off track signal input	76	RSEL	—	Pull up (+5V)
37	TRCRS	I	Track cross signal input	77	CSEL	—	Connected to GND
38	/RFDET	I	RF detect signal input	78	PSEL	—	〃
39	BDO	I	BDO input pin	79	MSEL	—	〃
40	LDON	O	Laser ON signal output	80	SSEL	—	Pull up (+5V)

■ AN8806SB (IC551) : RF & SERVO AMP

1. Terminal Layout



2. Block Diagram

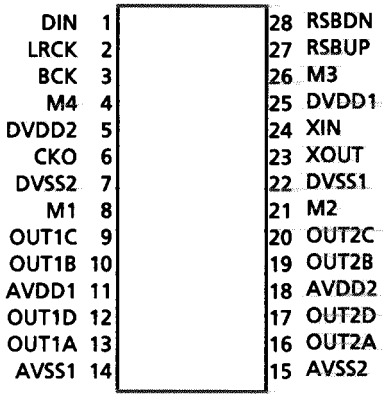


3. Description

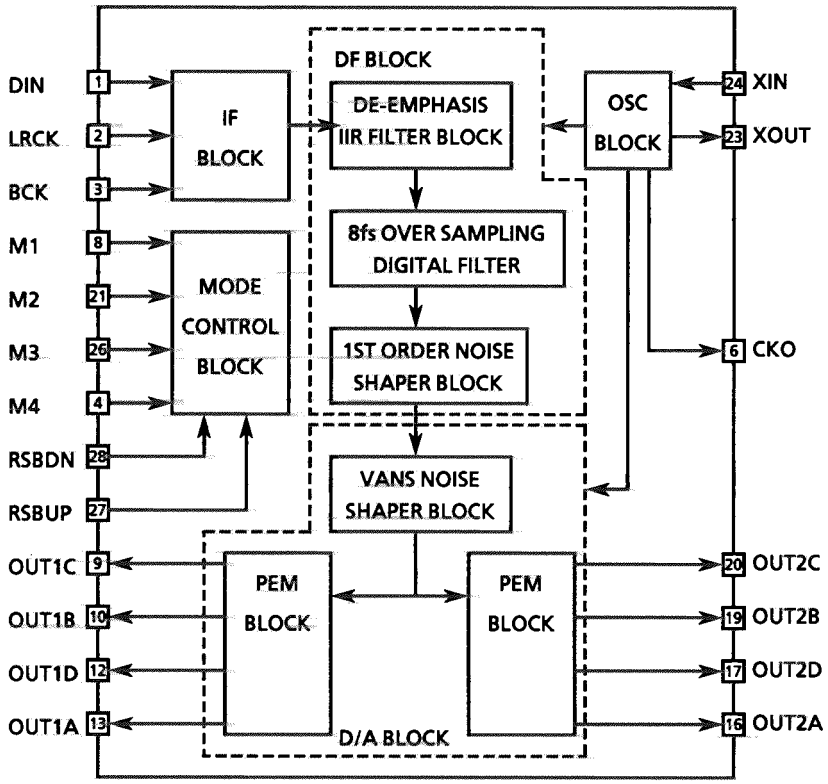
Pin No.	Symbol	I/O	Description
1	PD	I	APC AMP input
2	LD	O	APC AMP output
3	LD ON	I	APC on/off control signal input
4	LDP	--	Connected to GND
5	VCC	--	Power supply
6	RF-	I	Inverse input pin for RF amp
7	RF OUT	O	RF amp output pin
8	RF IN	I	AGC input pin
9	C.AGC	I/O	Connecting pin of AGC loop filter
10	ARF	O	AGC output pin
11	C.ENV	I/O	A capacitor is connected to this terminal to detect the envelope of RF signal
12	C.EA	I/O	A capacitor is connected to this terminal to detect the envelope of RF signal
13	CS BDO	I/O	A capacitor is connected to detect the lower envelope of the RF signal
14	BDO	O	BDO output pin
15	CS BRT	I/O	A capacitor is connected to detect the lower envelope of the RF signal
16	OFTR	O	Of-track status signal output pin
17	/NRFDET	O	RF detection signal output pin
18	GND	--	GND
19	ENV	O	Envelope output
20	VREF	O	Reference voltage output pin
21	LD OFF	--	Connect to GND
22	VDET	O	Vibration detection signal output pin
23	TE BPF	I	Input pin of tracking error through BPF
24	CROSS	O	Tracking error cross output pin
25	TE OUT	O	Tracking error signal output pin
26	TE-	I	Inverse input pin for tracking error amp
27	FE OUT	O	Output pin of focus error
28	FE-	I	Inverse input pin for focus error amp
29	FBAL	I	Focus balance control pin
30	TBAL	I	Tracking balance control pin
31	PDFR	I/O	E and E I-V amp gain control pin
32	PDER	I/O	F and E I-V amp gain control pin
33	PDF	I	I-V amp input pin
34	PDE	I	I-V amp input pin
35	PD BD	I	I-V amp input pin
36	PD AC	I	I-V amp input pin

■ MN35502(IC301) : D / A CONVERTER

1. Terminal Layout



2. Block Diagram

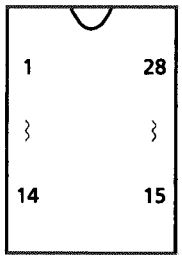


3.Description

Pin No	Symbol	I/O	Description	Pin No	Symbol	I/O	Description
1	DIN	I	Data input	15	AVSS2	--	Analog ground 2
2	LRCK	I	LR clock input	16	OUT2A	O	2A PEM output
3	BCK	I	Bit clock input	17	OUT2D	O	2D PEM output
4	M4	I	Operational mode control 4	18	AVDD2	--	Analog power supply 2
5	DVDD2	--	Digital power supply 2	19	OUT2B	O	2B PEM output
6	CKO	I	Clock output	20	OUT2C	O	2C PEM output
7	DVSS2	--	Digital ground 2	21	M2	--	Connected to ground
8	M1	--	Connected to ground	22	DVSS1	--	Digital ground pin 1
9	OUT1C	O	1C PEM output	23	XOUT	O	Crystal oscillator output
10	OUT1B	O	1B PEM output	24	XIN	I	Crystal oscillator input
11	AVDD1	--	Analog power supply 1	25	DVDD1	--	Digital power supply 1
12	OUT1D	O	1D PEM output	26	M3	--	Connected to ground
13	OUT1A	O	1A PEM output	27	RSBUP	--	Connected to ground
14	AVSS1	--	Analog ground 1	28	RSBDN	I	Reset signal / Digital Att. control signal input

■ UPD71051GU (IC751) : SERIAL CONTROL UNIT

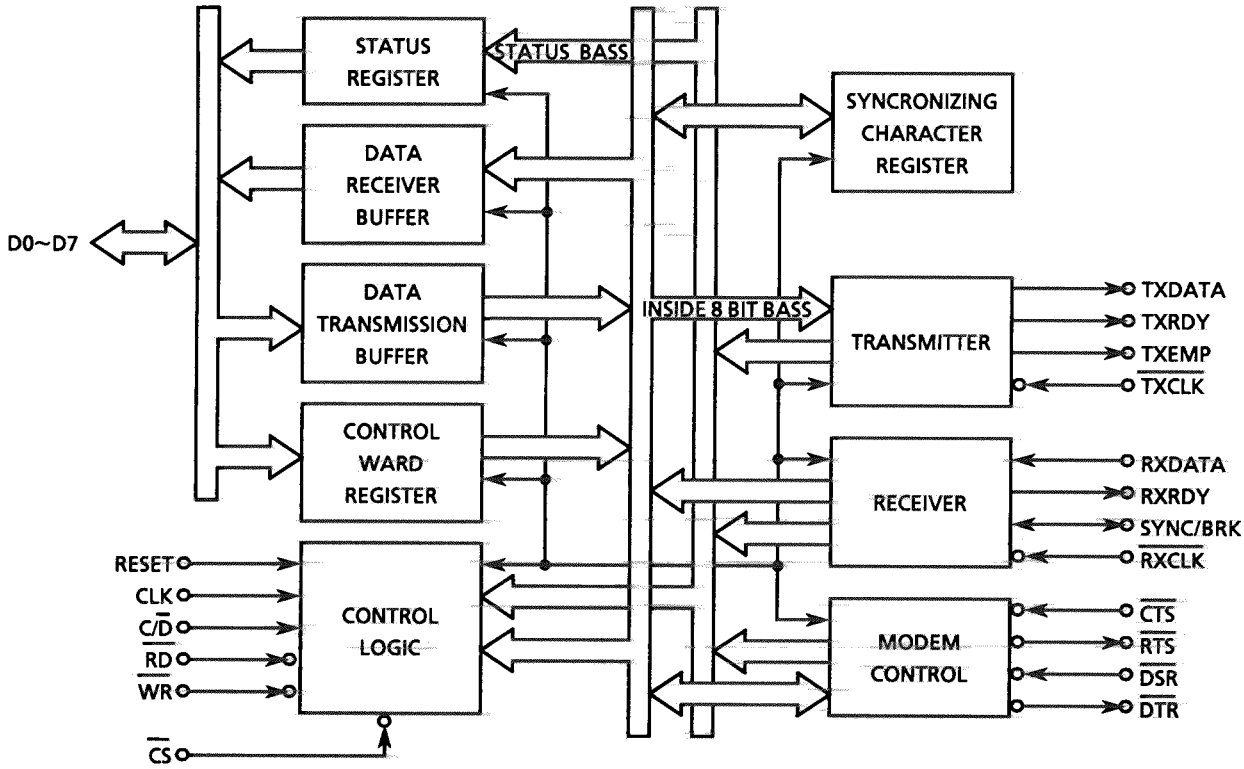
1. Terminal Layout



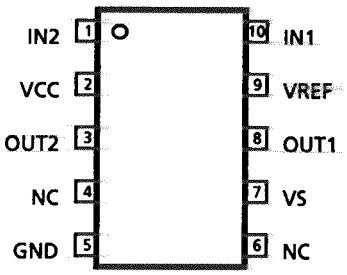
2. Terminal Functions

Pin No.	Symbol	Functions	Pin No.	Symbol	Functions
1~2	D2~D3	Data Bus	15 16	TXRDY SYNDET/BD	Not used
3	RXD	Receive data	17,22	CTS,DSR	Connect to GND
4	GND	GND	18	TXEMPTY	Not used
5~8	D4~D7	Data Bus	19	TXD	Transmit data
9	TXC	Transmitter clock	20	CLK	Clock
10	WR	Write	21	RESET	Reset
11	CS	Chip select	23,24	RTS,DTR	Not used
12	C/D	Control / Data	25	RXC	Receiver clock
13	RD	Read	26	VCC	Power supply
14	RXRDY	Receiver ready	27~28	D1~D0	Data Bus

3. Block Diagram



■ TA8409F (IC852) : DC MOTOR DRIVER



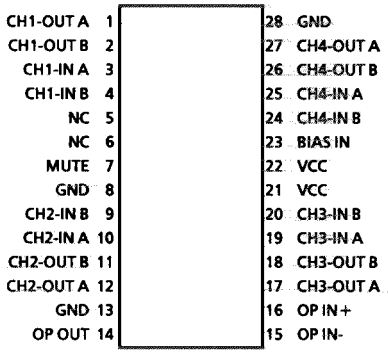
FUNCTION

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	OPEN
0	1	L	H	CLOSE
1	1	L	L	BRAKE

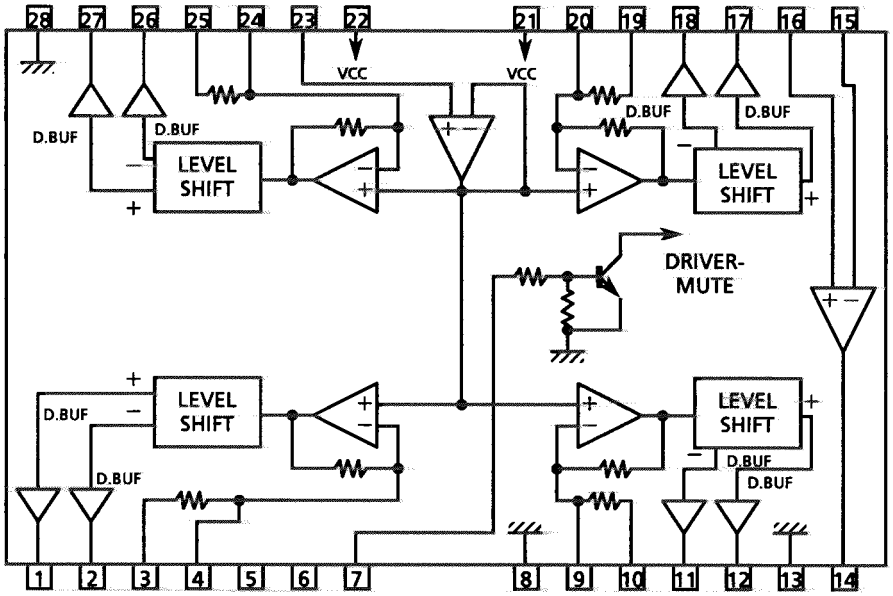
∞: High impedance

■ BA6398FP(IC851) : BTL DRIVER

1. Terminal Layout



2. Block Diagram



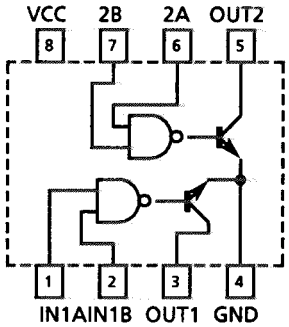
3.Description

Pin No.	Symbol	I/O	Description
1 2	CH1-OUT A CH1-OUT B	O	Focus drive output
4	CH1-IN B	I	Focus drive input
3 5,6 10 19 25	CH1-IN A NC CH2-IN A CH3-IN A CH4-IN A	—	Non connection
7	MUTE	I	Mute signal input pin
9 20	CH2-IN B CH3-IN B	I I	Spindle motor drive input Feed motor drive input
24	CH4-IN B	I	Tracking drive input

Pin No.	Symbol	I/O	Description
8,13,28	GND	—	GND
11 12	CH2-OUT B CH2-OUT A	O	Spindle motor drive output
14	OP OUT	O	OP amp output
15,16	OP IN	I	OP amp input
17 18	CH3-OUT A CH3-OUT B	O	Feed motor drive output
21,22	Vcc	—	Power supply
23	BIAS IN	I	Input pin of Bias
26 27	CH4-OUT B CH4-OUT A	O	Tracking drive output

■ SN75451BP (IC753) : Serial Eeprom

1. Terminal Layout

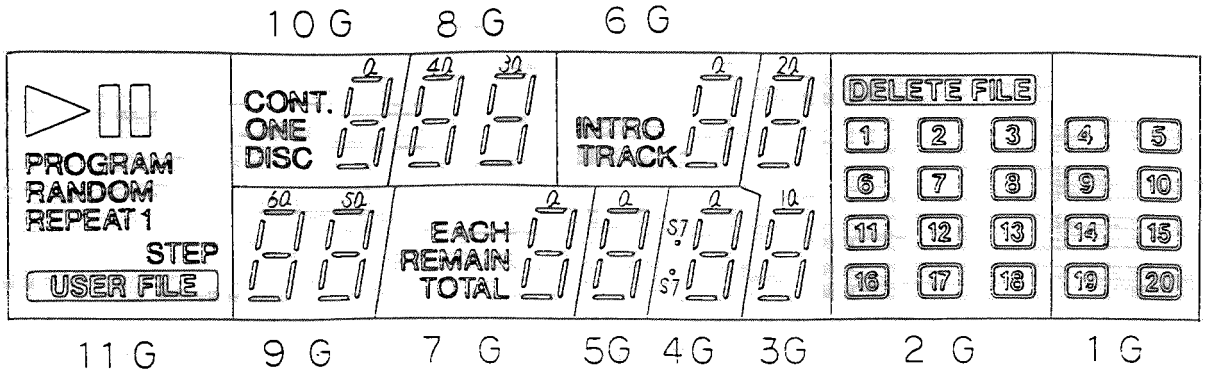


2. Terminal Function

A	B	OUT
L	L	L (ON)
L	H	L (ON)
H	L	L (ON)
H	H	H (OFF)

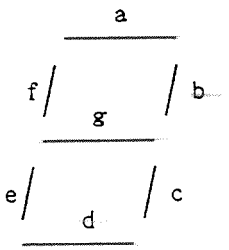
FL Display Tube

(1) Grid Layout



(2) Anode Designation

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1	▶	ONE	5a	3a					1a	DELETEFILE	
S2	▮▮	DISC	5b	3b					1b	①	④
S3	PROGRAM	CONT.	5f	3f	EACH				1f	②	⑤
S4	RANDOM		5g	3g	REMAIN				1g	③	⑨
S5	REPEAT		5c	3c	TOTAL				1c	⑥	⑩
S6	1		5e	3e		INTRO			1e	⑦	⑭
S7	STEP		5d	3d		TRACK		:	1d	⑧	⑮
S8	USERFILE	a	6a	4a	a	a	a	a	2a	⑪	⑲
S9		b	6b	4b	b	b	b	b	2b	⑫	⑳
S10		f	6f	4f	f	f	f	f	2f	⑬	
S11		g	6g	4g	g	g	g	g	2g	⑯	
S12		c	6c	4c	c	c	c	c	2c	⑰	
S13		e	6e	4e	e	e	e	e	2e	⑱	
S14		d	6d	4d	d	d	d	d	2d		



(3) Pin conections

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ELECTRODE	F	F	F	NP	NC	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC
TERMINAL NO.		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
ELECTRODE		P S14	P S13	P S12	P S11	P S10	P S9	P S8	P S7	P S6	P S5	P S4	P S3	P S2	P S1	NC	NP	F	F	F

Notes F: Filament NP: No Pin
G: Grid NC: No Connection
P: Anode

Disassembly Procedures

(1) Top cover removal
1. Remove 2 screws Ⓐon the rear side and 4 screws Ⓑ on both sides of the cover.
2. Remove the cover.

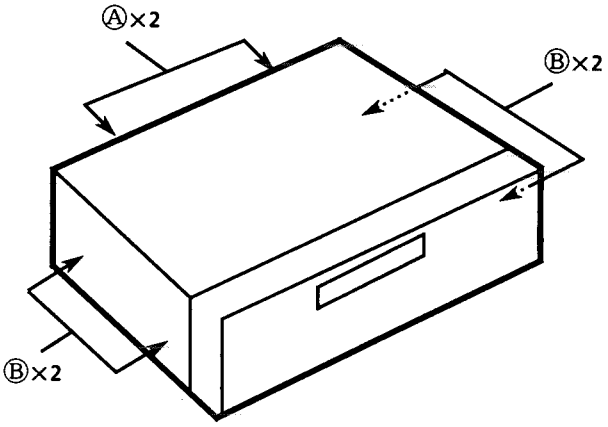


Fig1

(2) Rear panel removal
1. Remove the top cover.
2. Remove the 8screws Ⓒ.
3. Remove the rear panel.

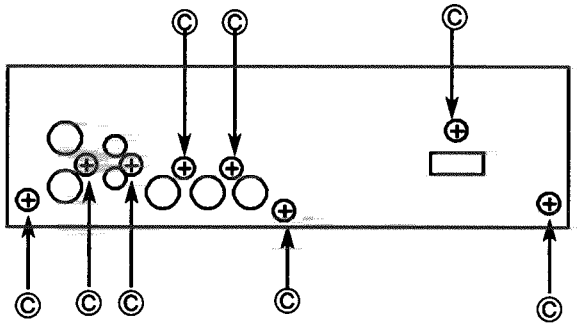


Fig2 Rear view

(3) Tray assembly removal
1. Remove the top cover.
2. Remove the screw Ⓓ.
3. Tune the screw located under the mechanism to remove the tray out of the loading mecha.
4. Remove the tray.

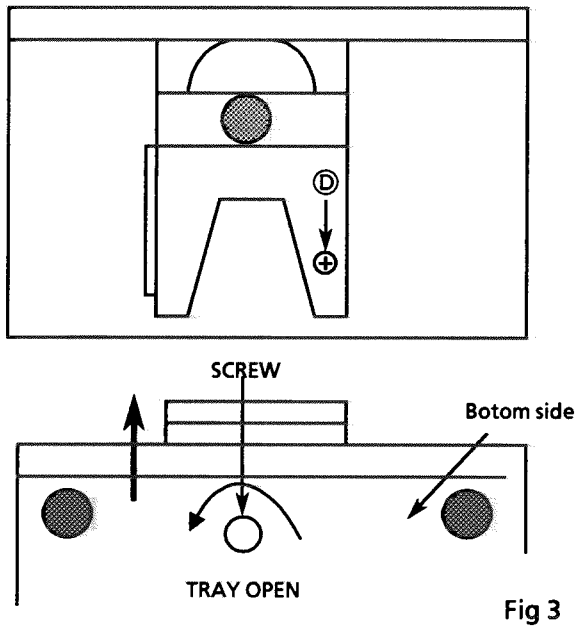


Fig 3

(4) CD mecha Ass'y removal
1.Remove the (1)(3).
2.Disconnect the P551,P851,P852.
3. Remove the 2 screws Ⓓto remove the clamp assembly .
4. Remove the 2 screws Ⓔ and screwS Ⓕ to remove the CD mecha Ass'y.

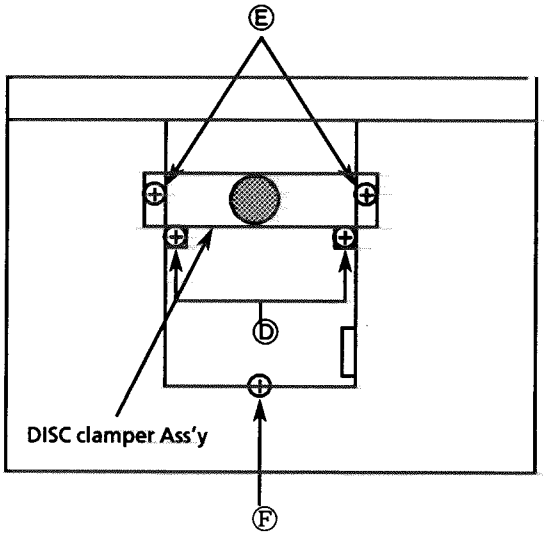


Fig 4 Top view

Ⓐ SDSG3008M Ⓑ E406308-001 Ⓒ E73273-006Ⓓ SBSF3008M Ⓔ SBST3025Z Ⓕ SBST3008Z

(5) Removing the front panel assembly
1. Remove the metal cover and tray assembiy.
2 Remove the 3screws Ⓖ on the bottom of the front panel.
3 Remove the connectorJ202,P107.
4 Release the hooks Ⓗ holding the front panel , and remove the front panel assembly.

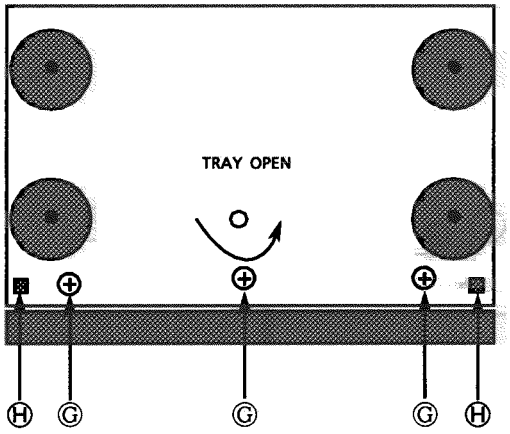


Fig 5 Bottom view

(6) Audio PCB(ENN-437-3) removal
1. Remove the topcover.
2. Disconect the conector P301,P302 and P303.
3. Remove the 4fasners Ⓘ.
4. Remove the Audio PCB(ENN-437-3).

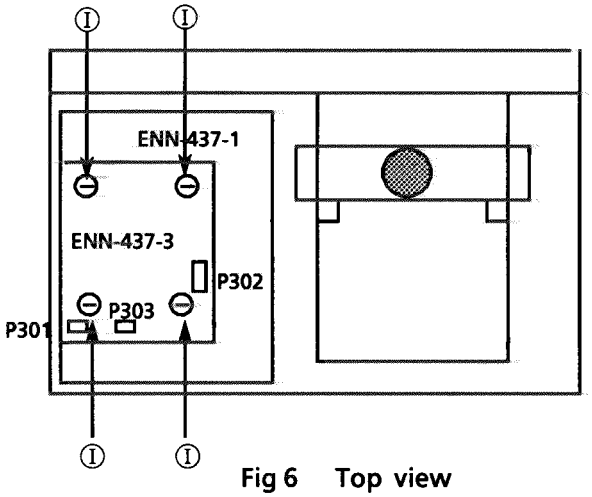


Fig 6 Top view

(7) CD Main PCB(ENN-437-1) removal
1. Remove the(1) (6).
2. Disconect the conector P911,P912 and P551,P851,P852.
3. Remove the 4screws Ⓙ.
4. Remove the Main PCB(ENN-437-1).

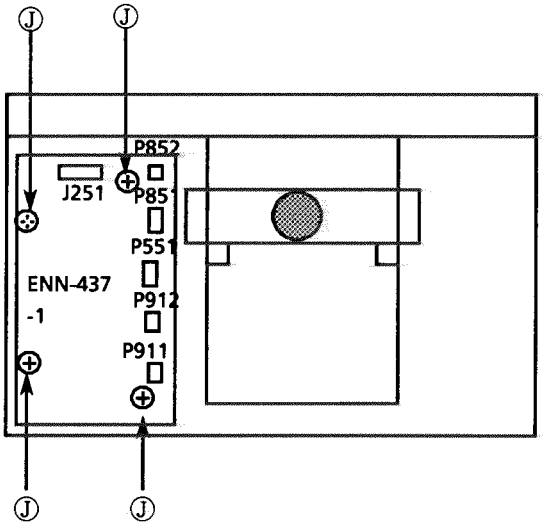


Fig 7 Top view

(8) Power PCB(ENN-437-2) removal
1. Remove the(1) (6).
2. Disconect the conector P911,912 .
3. Remove the 2screws Ⓚ and 2screws Ⓛ.
4. Remove the Power PCB(ENN-437-2).

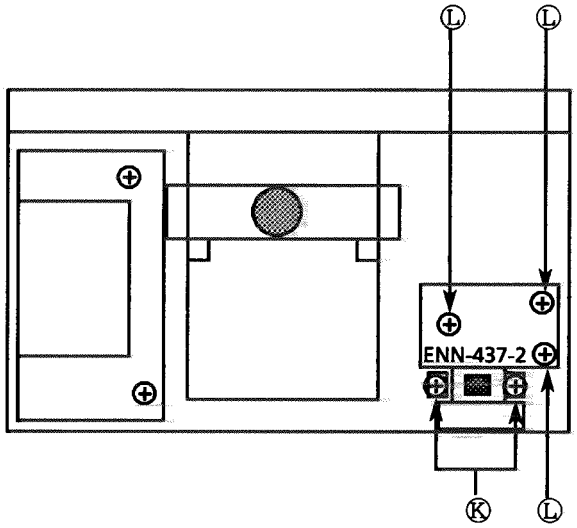


Fig 8 Top view

Ⓖ .. SDSF3008M Ⓗ ... SBSG3008Z Ⓙ ... SBSG3008Z .. Ⓚ ... E65389-002

(9) Front PCB(ENN-427-3~5) removal

1. Remove the (1)(3)(5).
2. Remove the Front panel ass'y.
3. Remove the 10 screws Ⓛ.
4. Remove the Front PCB.

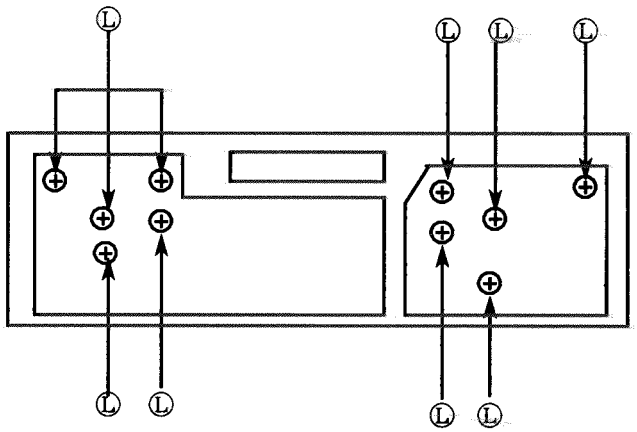


Fig 9 Front PCB view

(10) InstallingCD mecha. tray

1. Insert the CDmecha.tray after checking that the traverse mecha.is positioned slantingly.
2. If it is set horizontally,press the cam plate until it stops so that the traverse mech.slants.(See an arrow in the following figure.)

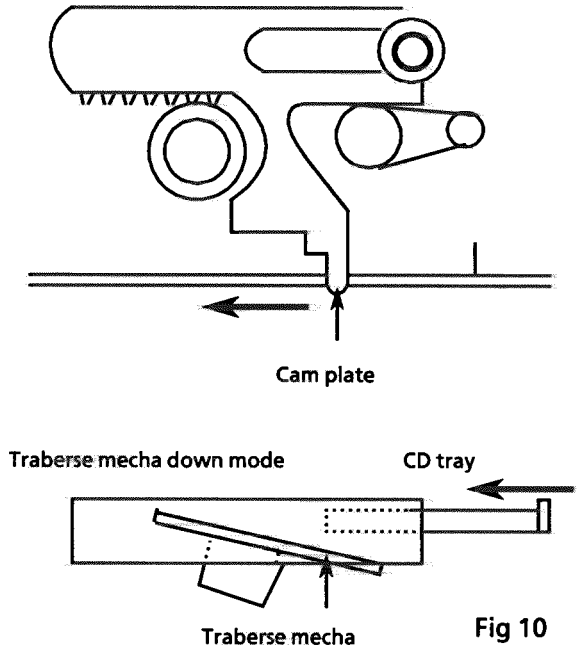
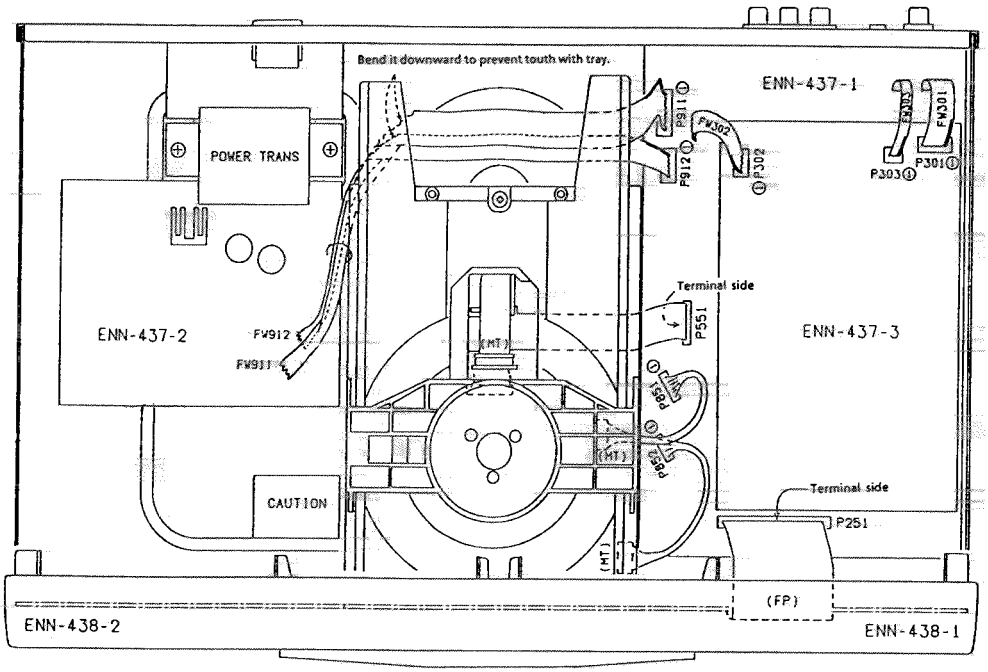


Fig 10

Wire assembry



Ⓛ .. SDSF2608Z

(11) Pickup removal
1. Remove the CD mechanism assembly.
2. Release the shaft to remove the pickup (Fig 9).

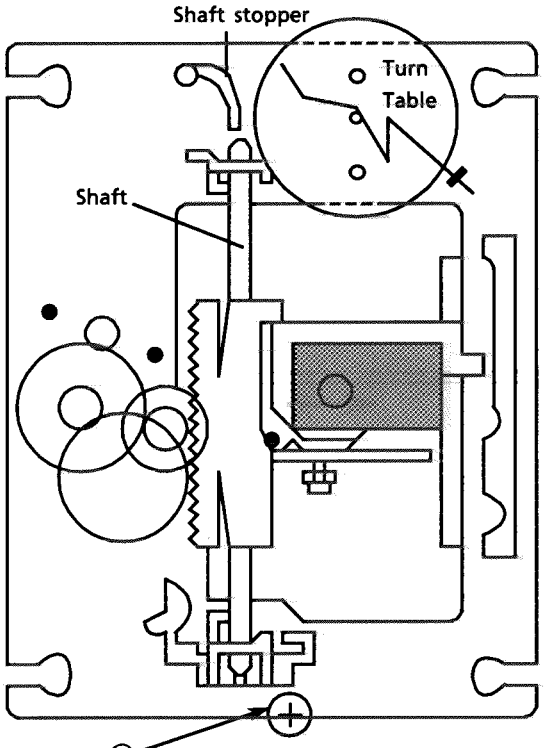


Fig 9 CD mechanism assembly

(12) Spindle motor removal
1. Remove the CD mechanism assembly.
2. Remove the turntable, and remove the two screws retaining the spindle motor.
3. Remove the screws retaining the spindle and feed motor P.C. Board and unsolder it.

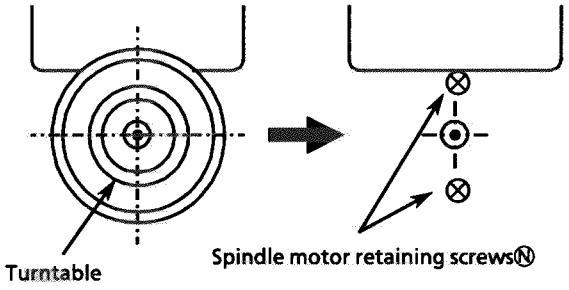


Fig 12

(13) Spindle motor installation
1. Tighten the 2 screws to the same torque.
2. Fasten the spindle and feed motor P.C. board with the screw and solder.
3. Install the turntable.When installing, press straight down at the center of the turntable until the distance from the surface of the mechanism base to the turntable is exactly 19.4±0.1mm.

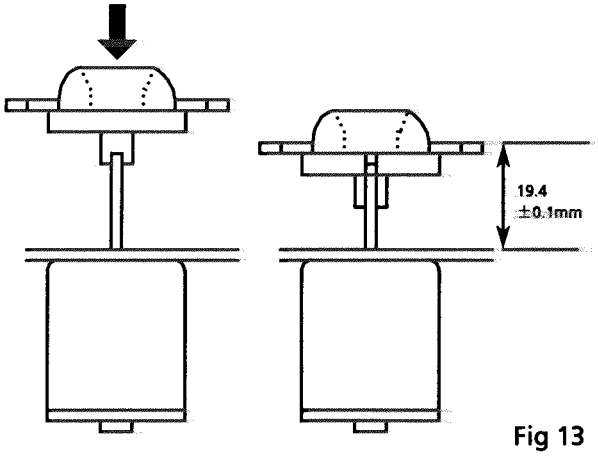


Fig 13

(14) After inserting the turntable, bond the motor shaft and turntable together (at the section marked by an arrow in fig 12 on the left below).

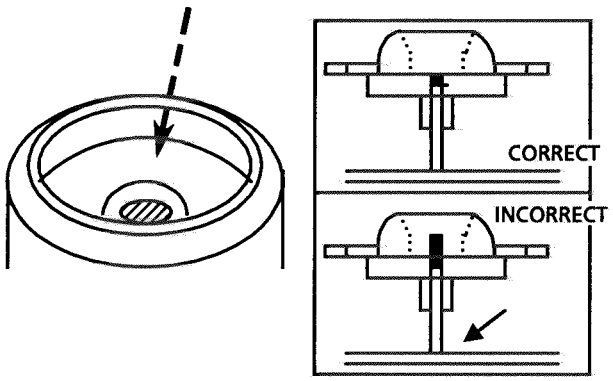
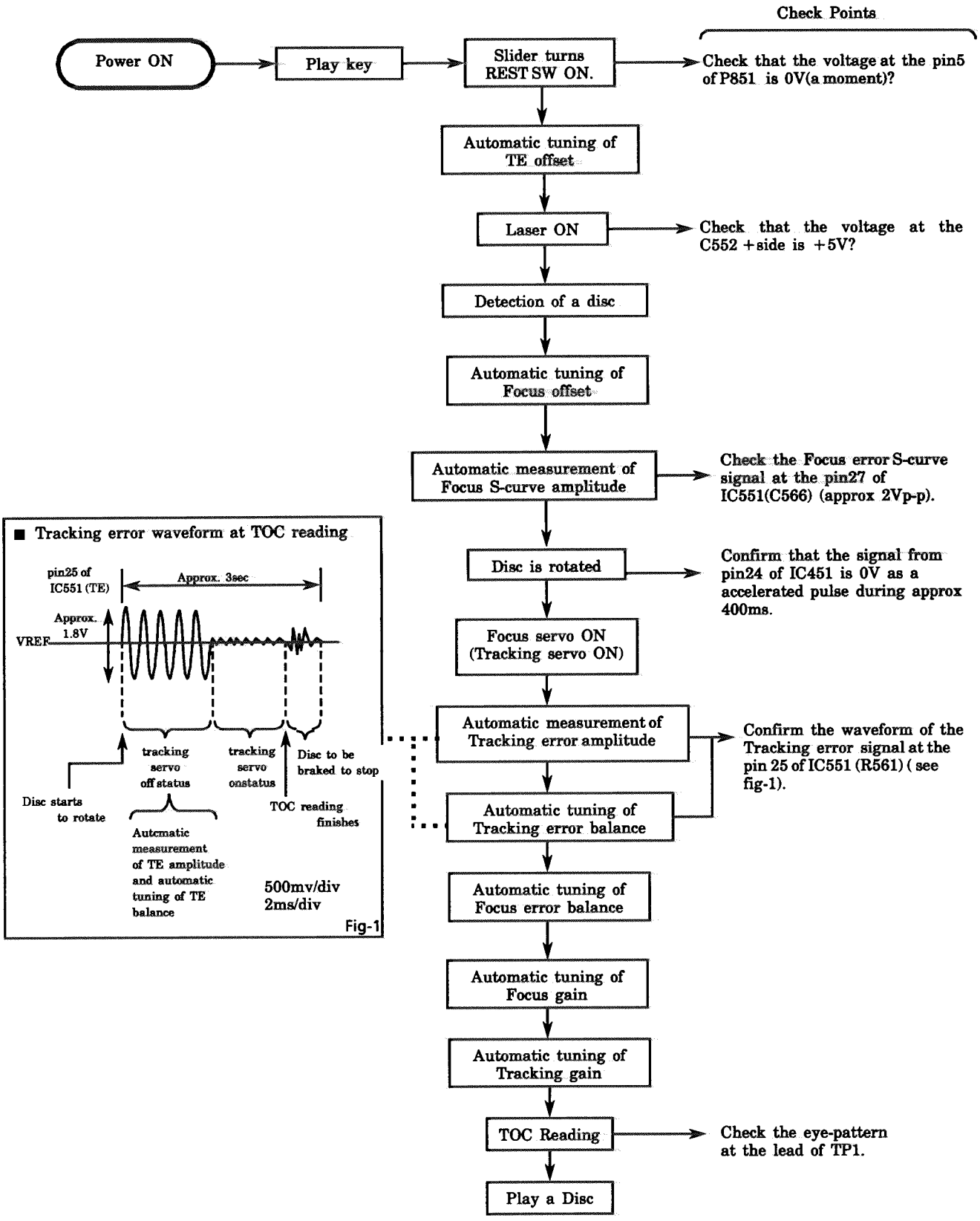


Fig 14

(15) Use "LOCKTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearing (the section marked by an allow in fig 14 on the right).

Ⓜ .. E406293-001 Ⓝ ... SDSP2003N

Flow of Functional Operation Until TOC is Read


Check Points
Power ON
Play key
Slider turns REST SW ON.
Check that the voltage at the pin5 of P851 is 0V(a moment)?
Automatic tuning of TE offset
Laser ON
Check that the voltage at the C552 +side is +5V?
Detection of a disc
Automatic tuning of Focus offset
Automatic measurement of Focus S-curve amplitude
Check the Focus error S-curve signal at the pin27 of IC551(C566) (approx 2Vp-p).
Disc is rotated
Confirm that the signal from pin24 of IC451 is 0V as a accelerated pulse during approx 400ms.
Focus servo ON (Tracking servo ON)
Automatic measurement of Tracking error amplitude
Confirm the waveform of the Tracking error signal at the pin 25 of IC551 (R561) (see fig-1).
Automatic tuning of Tracking error balance
Automatic tuning of Focus error balance
Automatic tuning of Focus gain
Automatic tuning of Tracking gain
TOC Reading
Check the eye-pattern at the lead of TP1.
Play a Disc
■ Tracking error waveform at TOC reading
pin25 of IC551 (TE)
Approx. 3sec
Approx. 1.8V
VREF
tracking servo off status
tracking servo onstatus
Disc to be braked to stop
Disc starts to rotate
TOC reading finishes
Autcmatic measurement of TE amplitude and automatic tuning of TE balance
500mv/div
2ms/div
Fig-1

Maintenance of Laser Pickup

(1) Cleaning the pick up lens

Before you replace the pickup, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode

RF level (amplitude of eye pattern) is decreased when the life of laser diode is run out.

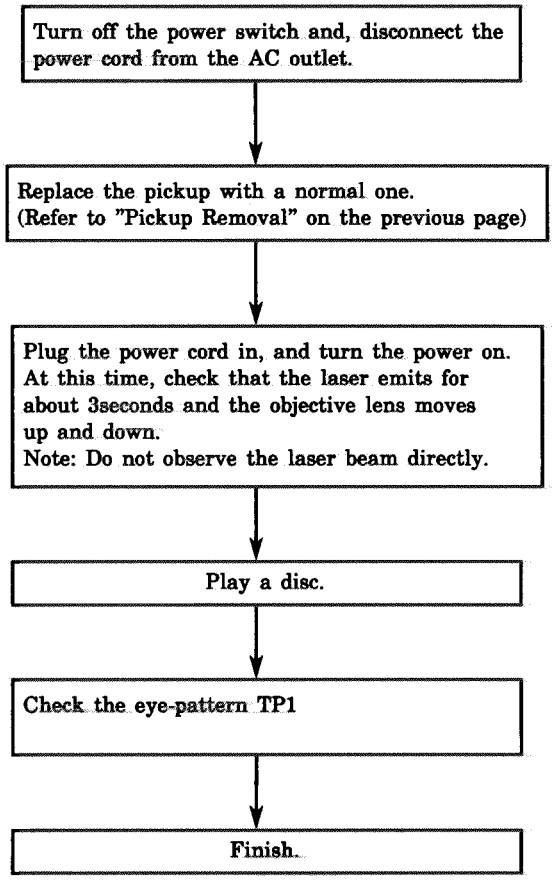
Check that the RF level is over 0.7Vp-p and under 1.2V.

The pickup should be exchanged with new one for run out of its life if the value is 0.7Vp-p below.

(3) Semi-fixed resistor on the APC PC board

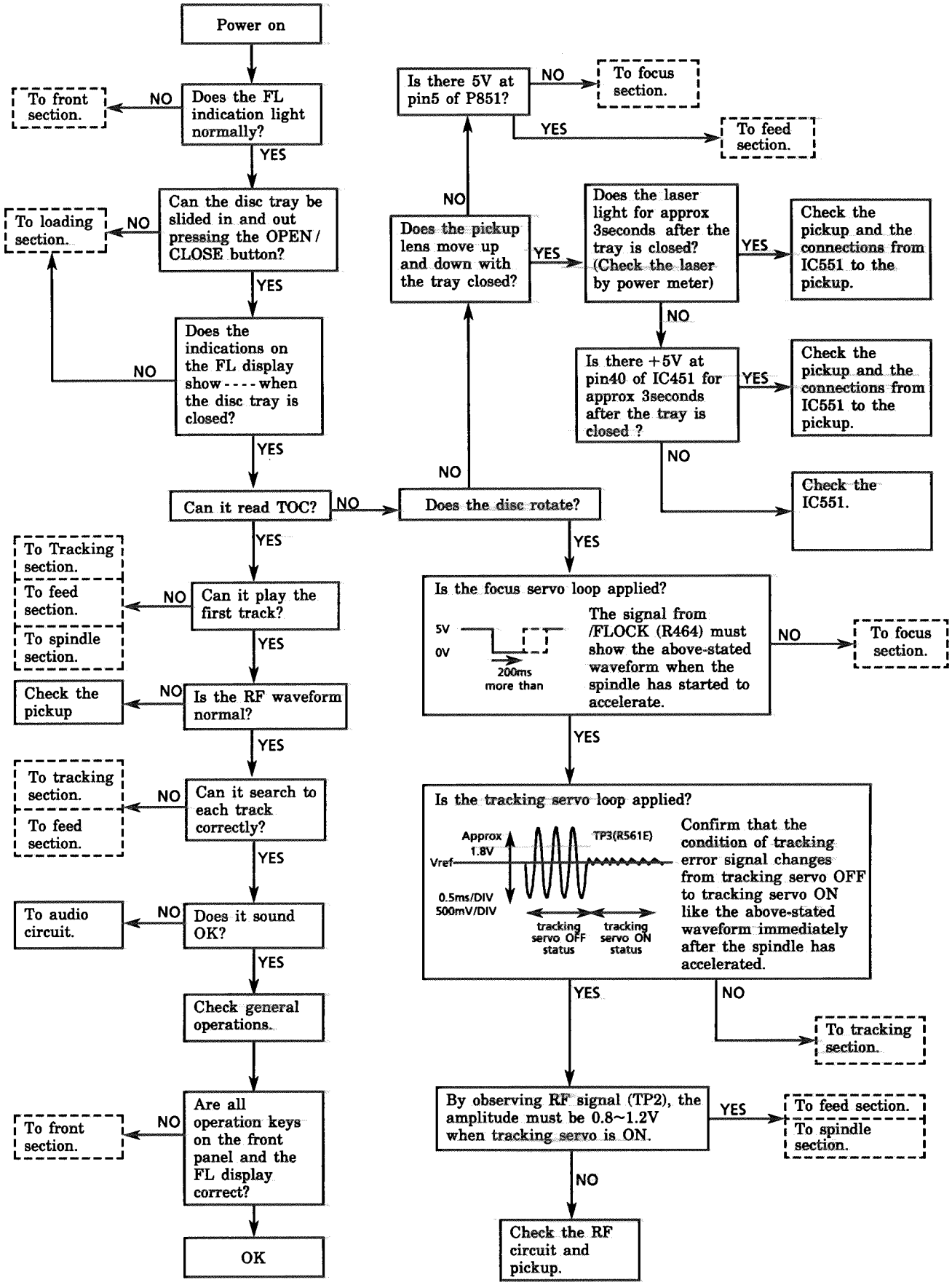
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup

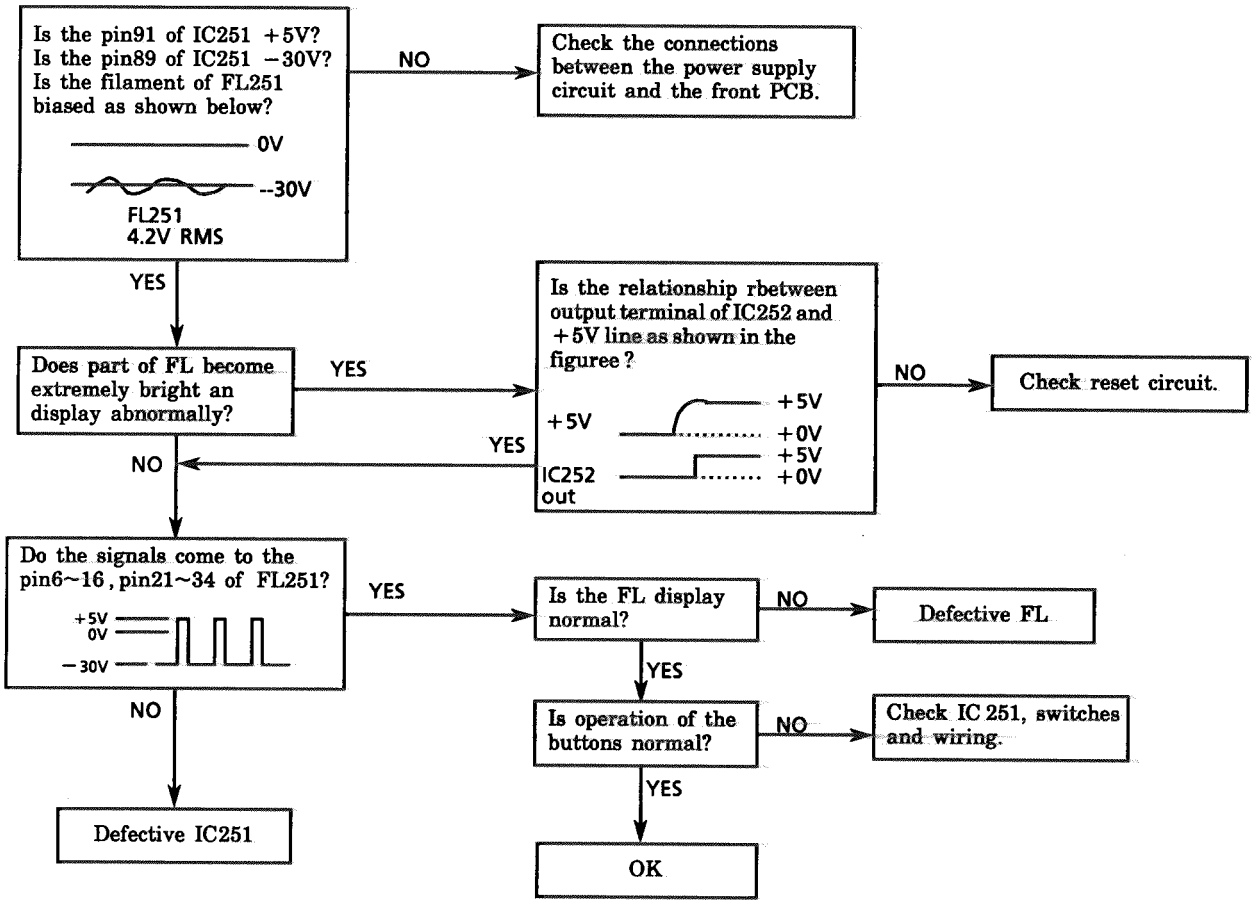

Turn off the power switch and, disconnect the power cord from the AC outlet.
Replace the pickup with a normal one. (Refer to "Pickup Removal" on the previous page)
Plug the power cord in, and turn the power on. At this time, check that the laser emits for about 3seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.
Play a disc.
Check the eye-pattern TP1
Finish.

Troubleshooting

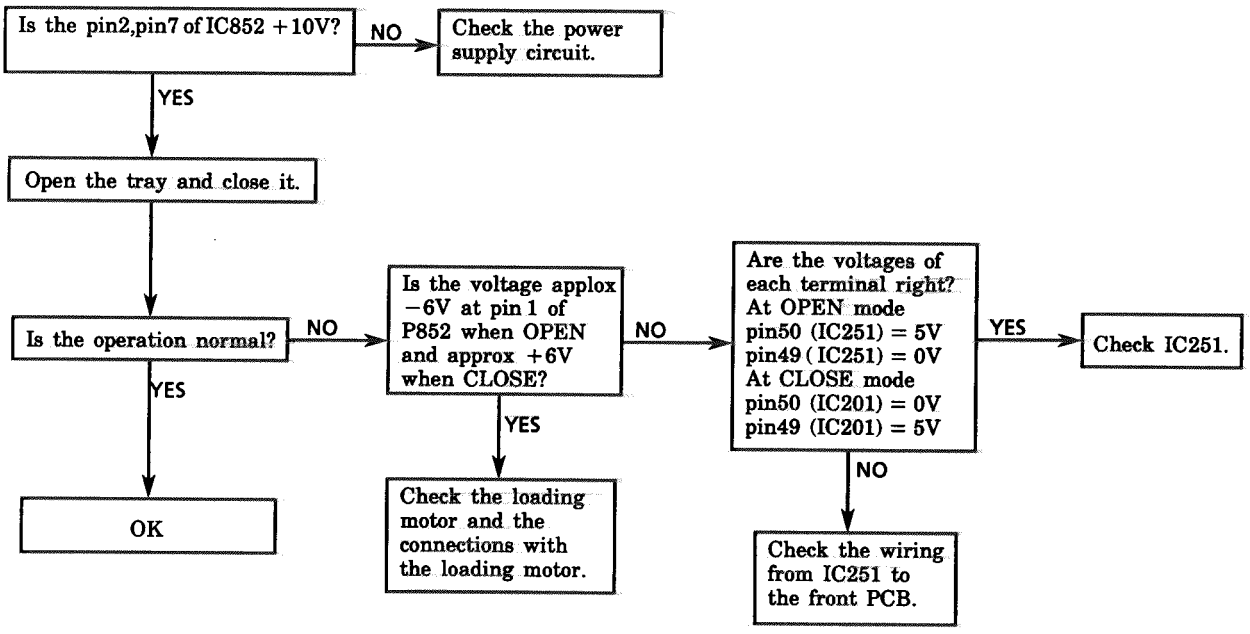
The following shows the status of the various circuits from turning on the power to the start of disc play.


Power on
Does the FL indication light normally?
NO
To front section.
YES
Can the disc tray be slided in and out pressing the OPEN/CLOSE button?
NO
To loading section.
YES
Does the indications on the FL display show - - - - when the disc tray is closed?
NO
YES
Can it read TOC?
NO
Does the disc rotate?
NO
YES
Is there 5V at pin5 of P851?
NO
To focus section.
YES
To feed section.
Does the pickup lens move up and down with the tray closed?
NO
YES
Does the laser light for approx 3seconds after the tray is closed? (Check the laser by power meter)
YES
Check the pickup and the connections from IC551 to the pickup.
NO
Is there +5V at pin40 of IC451 for approx 3seconds after the tray is closed ?
YES
Check the pickup and the connections from IC551 to the pickup.
NO
Check the IC551.
YES
Is the focus servo loop applied?
5V
0V
200ms more than
The signal from /FLOCK (R464) must show the above-stated waveform when the spindle has started to accelerate.
NO
To focus section.
YES
Is the tracking servo loop applied?
Approx 1.8V
Vref
TP3(R561E)
0.5ms/DIV
500mV/DIV
tracking servo OFF status
tracking servo ON status
Confirm that the condition of tracking error signal changes from tracking servo OFF to tracking servo ON like the above-stated waveform immediately after the spindle has accelerated.
YES
NO
To tracking section.
By observing RF signal (TP2), the amplitude must be 0.8~1.2V when tracking servo is ON.
YES
To feed section.
To spindle section.
NO
Check the RF circuit and pickup.
To Tracking section.
To feed section.
To spindle section.
NO
Can it play the first track?
YES
Check the pickup
NO
Is the RF waveform normal?
YES
To tracking section.
To feed section.
NO
Can it search to each track correctly?
YES
To audio circuit.
NO
Does it sound OK?
YES
Check general operations.
To front section.
NO
Are all operation keys on the front panel and the FL display correct?
OK

Front Section

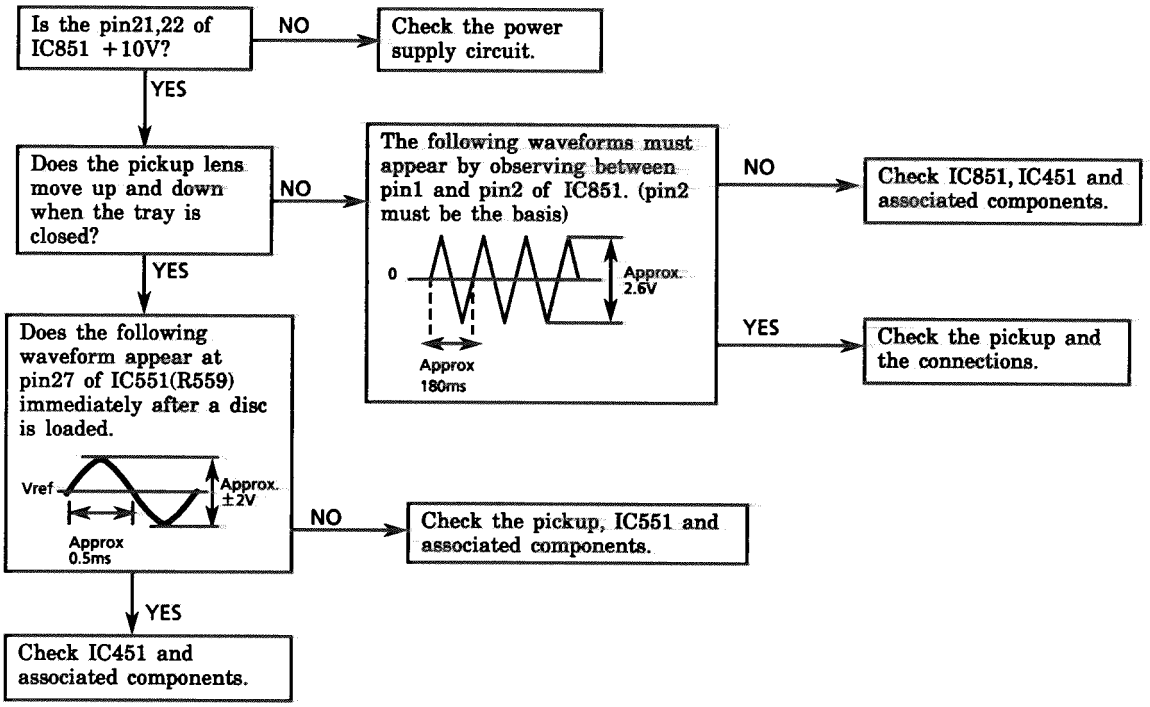


Loading section

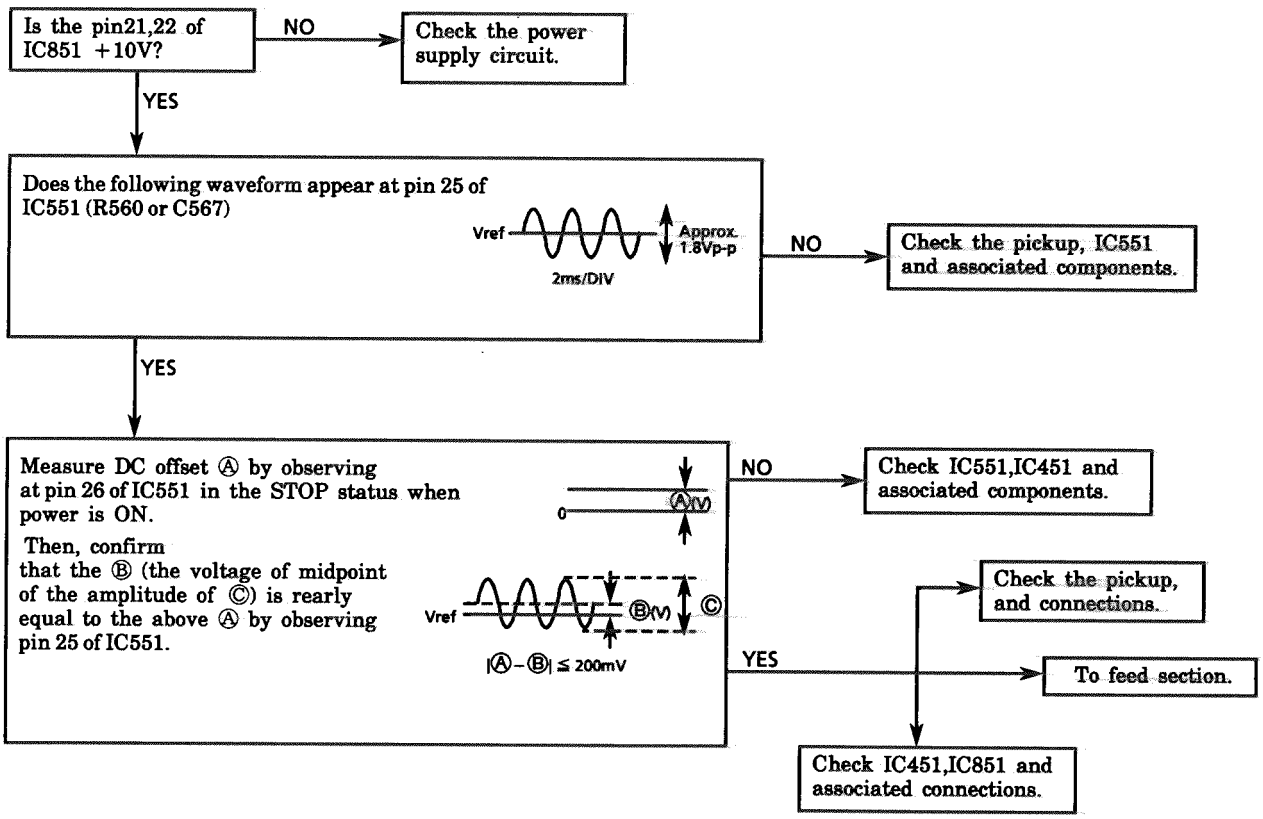

Is the pin2,pin7 of IC852 +10V?
NO
Check the power supply circuit.
YES
Open the tray and close it.
Is the operation normal?
NO
Is the voltage applox −6V at pin 1 of P852 when OPEN and approx +6V when CLOSE?
NO
Are the voltages of each terminal right?
At OPEN mode
pin50 (IC251) = 5V
pin49 (IC251) = 0V
At CLOSE mode
pin50 (IC201) = 0V
pin49 (IC201) = 5V
YES
Check IC251.
YES
YES
OK
Check the loading motor and the connections with the loading motor.
NO
Check the wiring from IC251 to the front PCB.

Focus section

Note) When checking the voltages between pin1 and pin2 of IC801 with an oscilloscope, do not connect the other probes.

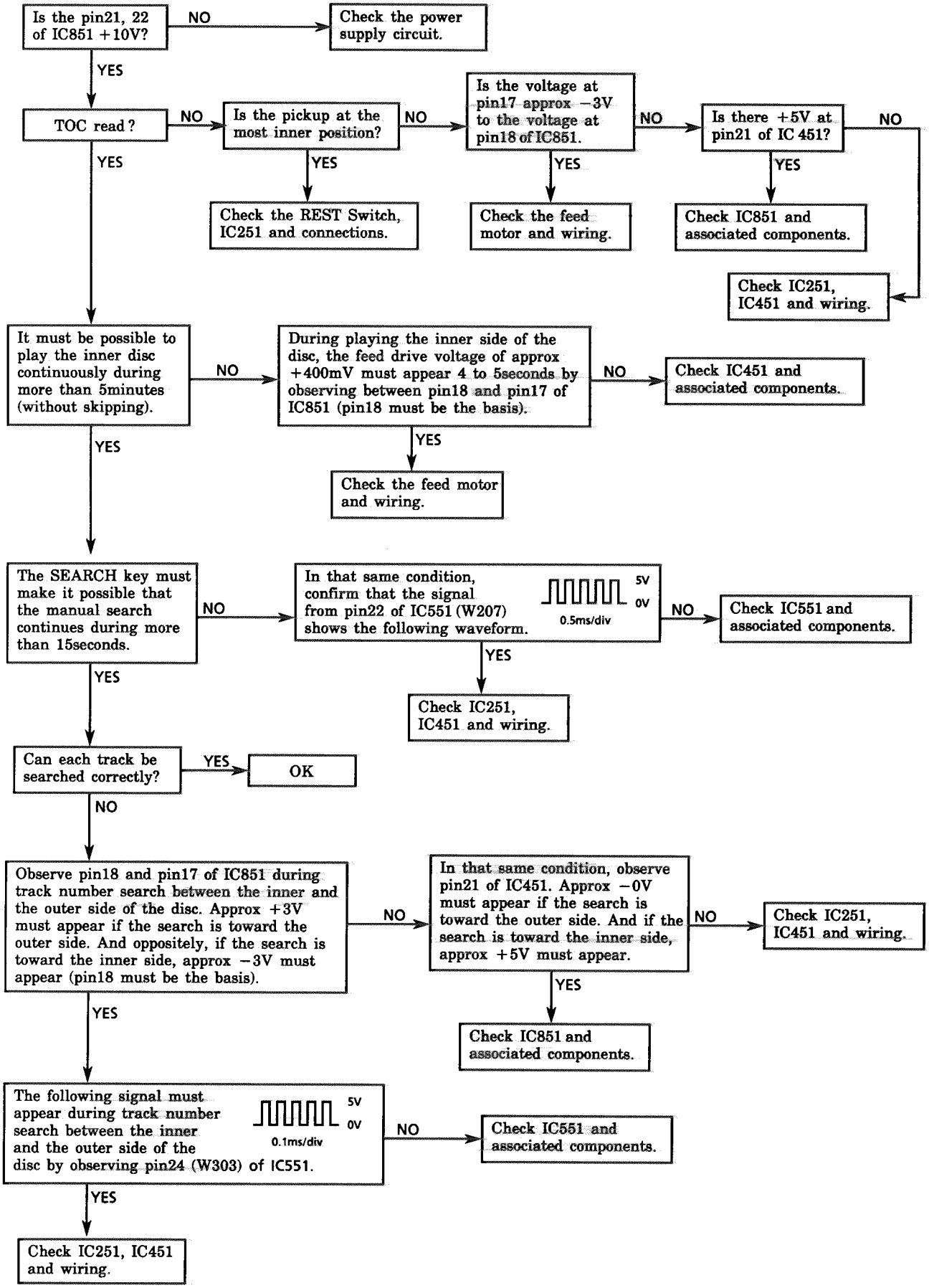

Is the pin21,22 of IC851 +10V?
NO
Check the power supply circuit.
YES
Does the pickup lens move up and down when the tray is closed?
NO
The following waveforms must appear by observing between pin1 and pin2 of IC851. (pin2 must be the basis)
0
Approx. 2.6V
Approx 180ms
NO
Check IC851, IC451 and associated components.
YES
Check the pickup and the connections.
YES
Does the following waveform appear at pin27 of IC551(R559) immediately after a disc is loaded.
Vref
Approx. ±2V
Approx 0.5ms
NO
Check the pickup, IC551 and associated components.
YES
Check IC451 and associated components.

Tracking section


Is the pin21,22 of IC851 +10V?
NO
Check the power supply circuit.
YES
Does the following waveform appear at pin 25 of IC551 (R560 or C567)
Vref
Approx. 1.8Vp-p
2ms/DIV
NO
Check the pickup, IC551 and associated components.
YES
Measure DC offset Ⓐ by observing at pin 26 of IC551 in the STOP status when power is ON.
Then, confirm that the Ⓑ (the voltage of midpoint of the amplitude of Ⓒ) is rearly equal to the above Ⓐ by observing pin 25 of IC551.
0
Ⓐ(V)
Vref
Ⓑ(V)
Ⓒ
|Ⓐ−Ⓑ| ≤ 200mV
NO
Check IC551,IC451 and associated components.
YES
Check the pickup, and connections.
To feed section.
Check IC451,IC851 and associated connections.

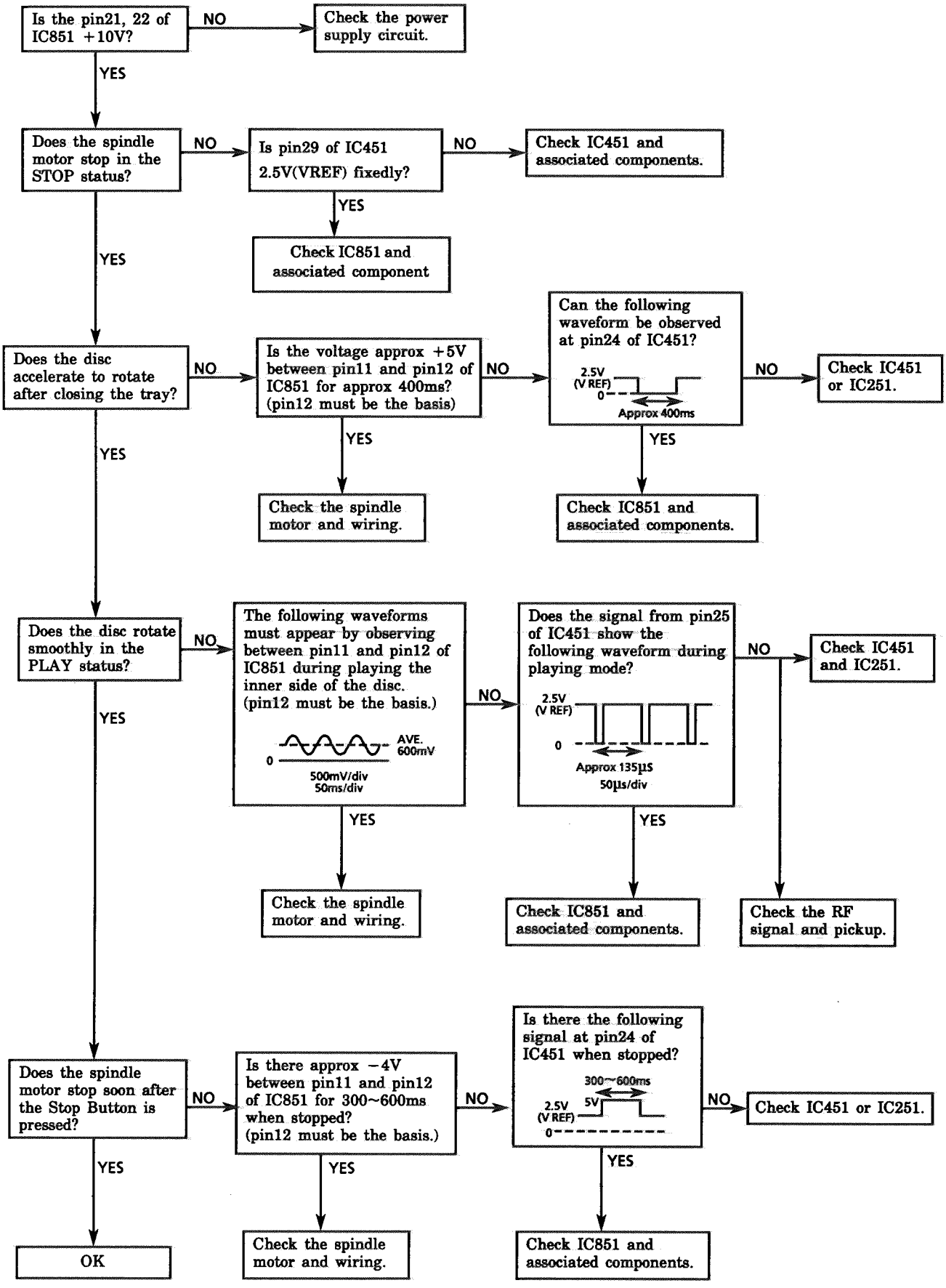
Feed section

Note) When checking the voltages between pin18 and pin17 of IC801 with an oscilloscope, do not connect the other probes.

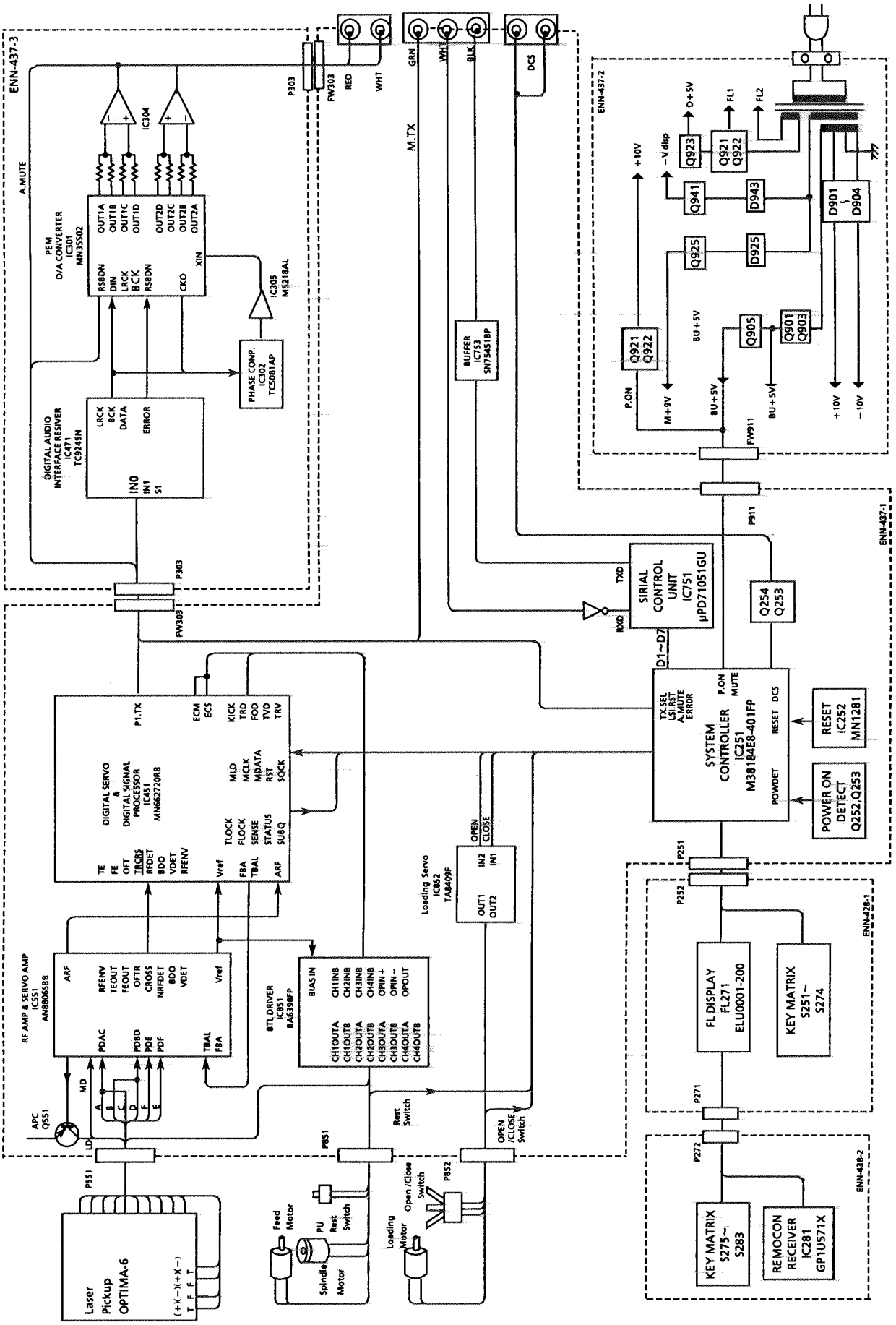

Is the pin21, 22 of IC851 +10V?
NO
Check the power supply circuit.
YES
TOC read?
NO
Is the pickup at the most inner position?
NO
Is the voltage at pin17 approx −3V to the voltage at pin18 of IC851.
NO
Is there +5V at pin21 of IC 451?
NO
YES
YES
YES
YES
Check the REST Switch, IC251 and connections.
Check the feed motor and wiring.
Check IC851 and associated components.
Check IC251, IC451 and wiring.
It must be possible to play the inner disc continuously during more than 5minutes (without skipping).
NO
During playing the inner side of the disc, the feed drive voltage of approx +400mV must appear 4 to 5seconds by observing between pin18 and pin17 of IC851 (pin18 must be the basis).
NO
Check IC451 and associated components.
YES
YES
Check the feed motor and wiring.
The SEARCH key must make it possible that the manual search continues during more than 15seconds.
NO
In that same condition, confirm that the signal from pin22 of IC551 (W207) shows the following waveform.
5V
0V
0.5ms/div
NO
Check IC551 and associated components.
YES
YES
Check IC251, IC451 and wiring.
Can each track be searched correctly?
YES
OK
NO
Observe pin18 and pin17 of IC851 during track number search between the inner and the outer side of the disc. Approx +3V must appear if the search is toward the outer side. And oppositely, if the search is toward the inner side, approx −3V must appear (pin18 must be the basis).
NO
In that same condition, observe pin21 of IC451. Approx −0V must appear if the search is toward the outer side. And if the search is toward the inner side, approx +5V must appear.
NO
Check IC251, IC451 and wiring.
YES
YES
Check IC851 and associated components.
The following signal must appear during track number search between the inner and the outer side of the disc by observing pin24 (W303) of IC551.
5V
0V
0.1ms/div
NO
Check IC551 and associated components.
YES
Check IC251, IC451 and wiring.

Spindle section

Note) When checking the voltages between pin11 and pin12 of IC851 with an oscilloscope, do not connect the other probes.

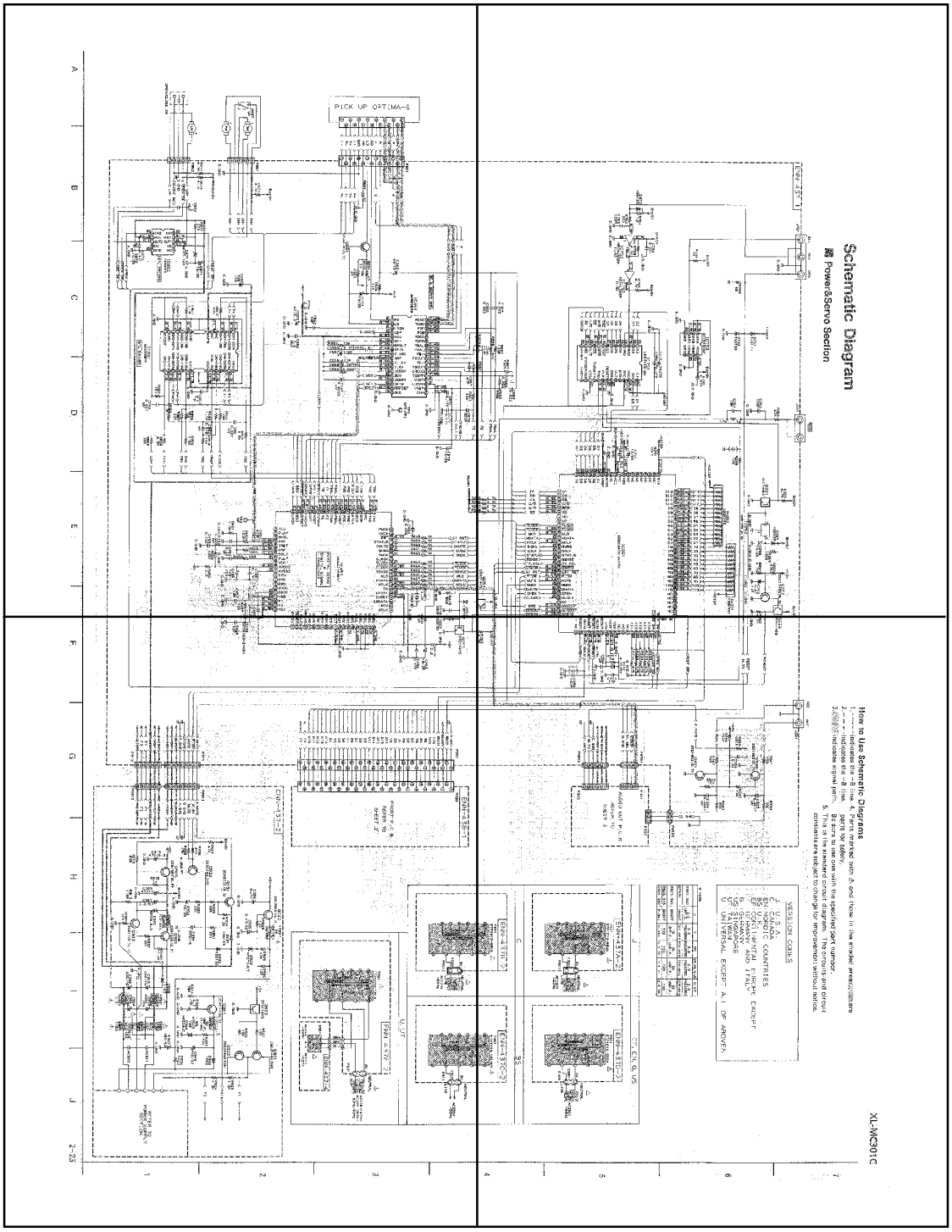

Is the pin21, 22 of IC851 +10V?
NO
Check the power supply circuit.
YES
Does the spindle motor stop in the STOP status?
NO
Is pin29 of IC451 2.5V(VREF) fixedly?
NO
Check IC451 and associated components.
YES
Check IC851 and associated component
YES
Does the disc accelerate to rotate after closing the tray?
NO
Is the voltage approx +5V between pin11 and pin12 of IC851 for approx 400ms? (pin12 must be the basis)
NO
Can the following waveform be observed at pin24 of IC451?
2.5V (V REF)
0
Approx 400ms
NO
Check IC451 or IC251.
YES
Check the spindle motor and wiring.
YES
Check IC851 and associated components.
YES
Does the disc rotate smoothly in the PLAY status?
NO
The following waveforms must appear by observing between pin11 and pin12 of IC851 during playing the inner side of the disc. (pin12 must be the basis.)
AVE. 600mV
0
500mV/div
50ms/div
NO
Does the signal from pin25 of IC451 show the following waveform during playing mode?
2.5V (V REF)
0
Approx 135µs
50µs/div
NO
Check IC451 and IC251.
YES
Check the spindle motor and wiring.
YES
Check IC851 and associated components.
Check the RF signal and pickup.
YES
Does the spindle motor stop soon after the Stop Button is pressed?
NO
Is there approx −4V between pin11 and pin12 of IC851 for 300~600ms when stopped? (pin12 must be the basis.)
NO
Is there the following signal at pin24 of IC451 when stopped?
300~600ms
2.5V (V REF)
5V
0
NO
Check IC451 or IC251.
YES
OK
YES
Check the spindle motor and wiring.
YES
Check IC851 and associated components.

■ Block Diagrams(XL-MC301C)



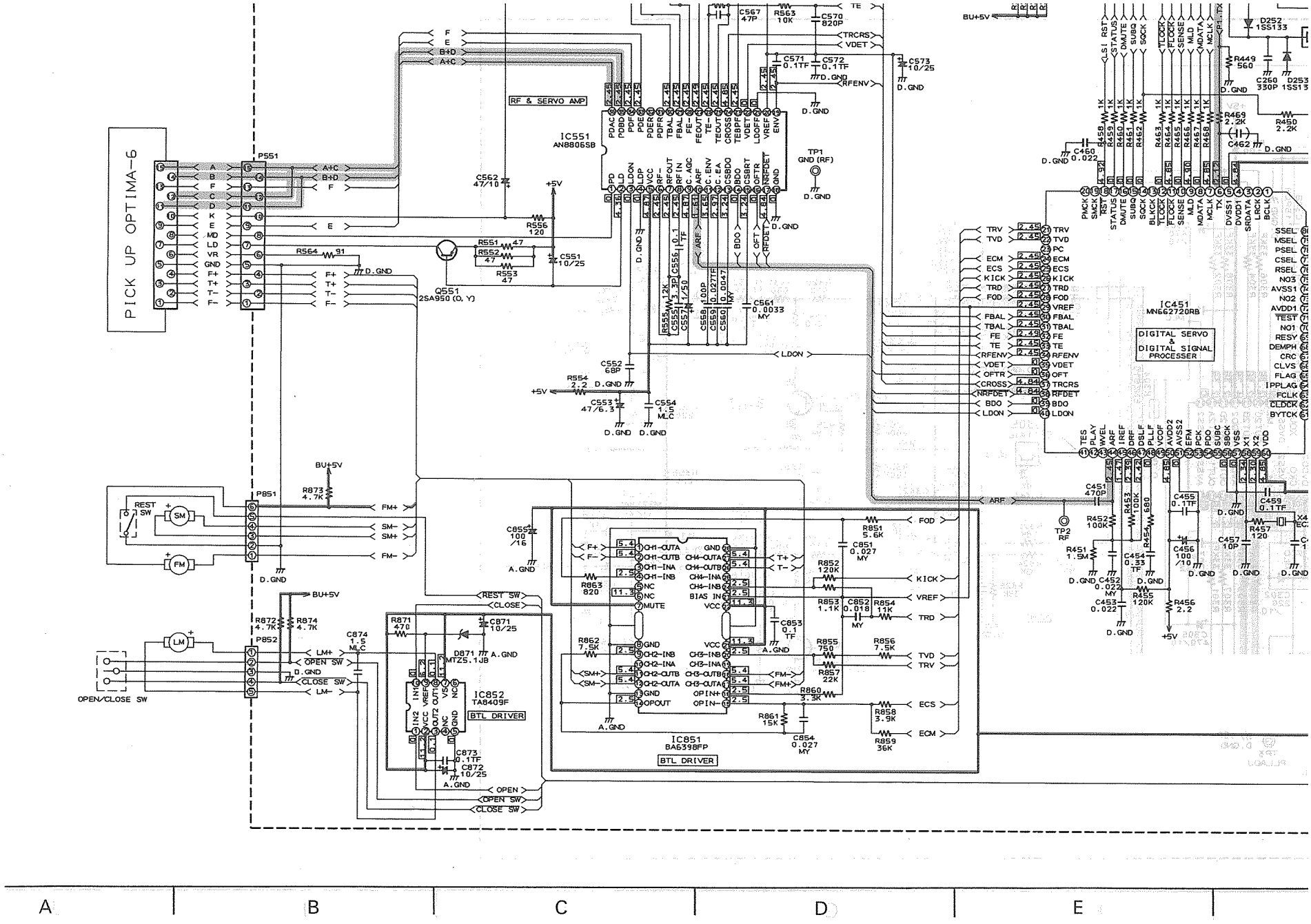
P2-23-a

P2-23-b



P2-23-c

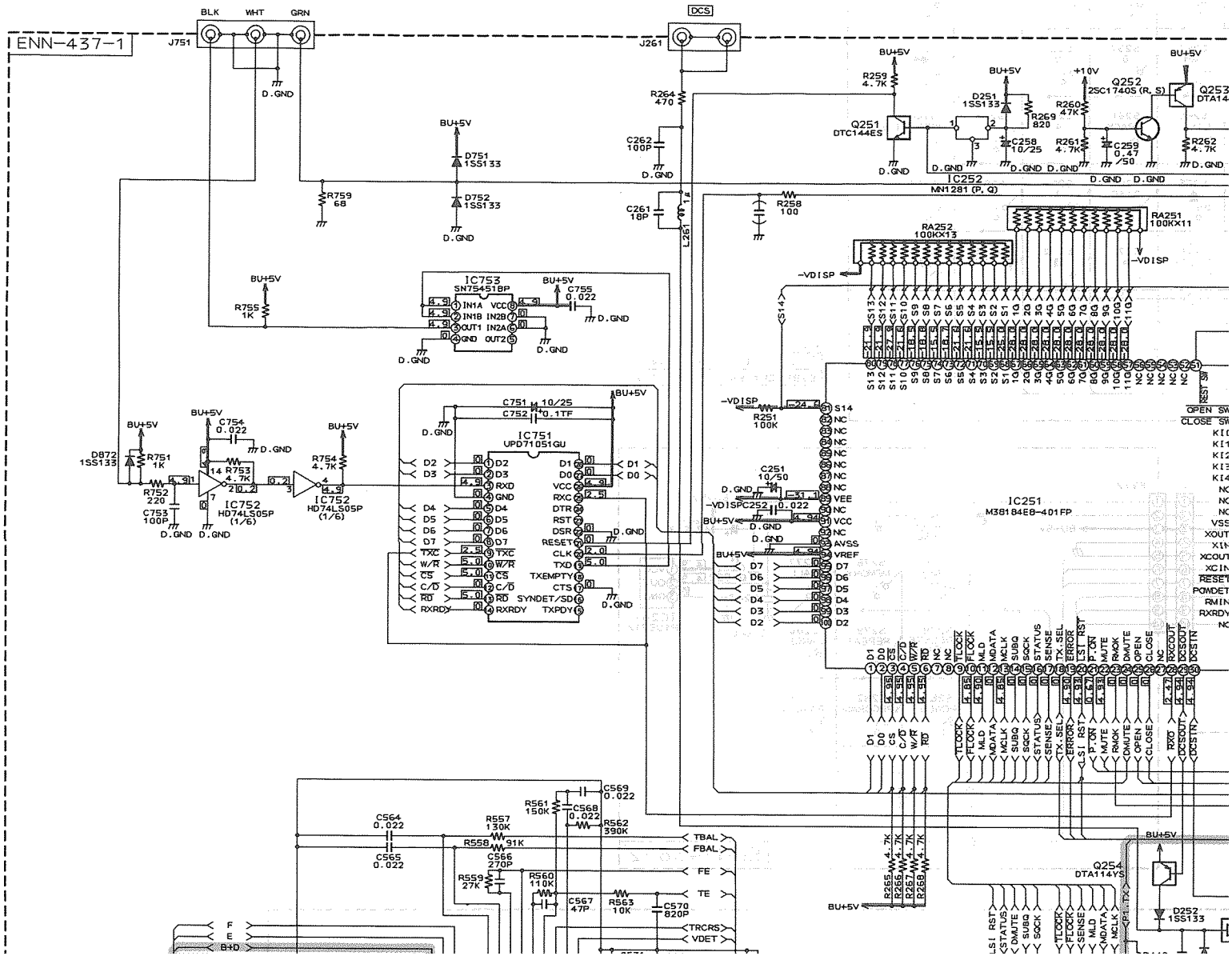
P2-23-d

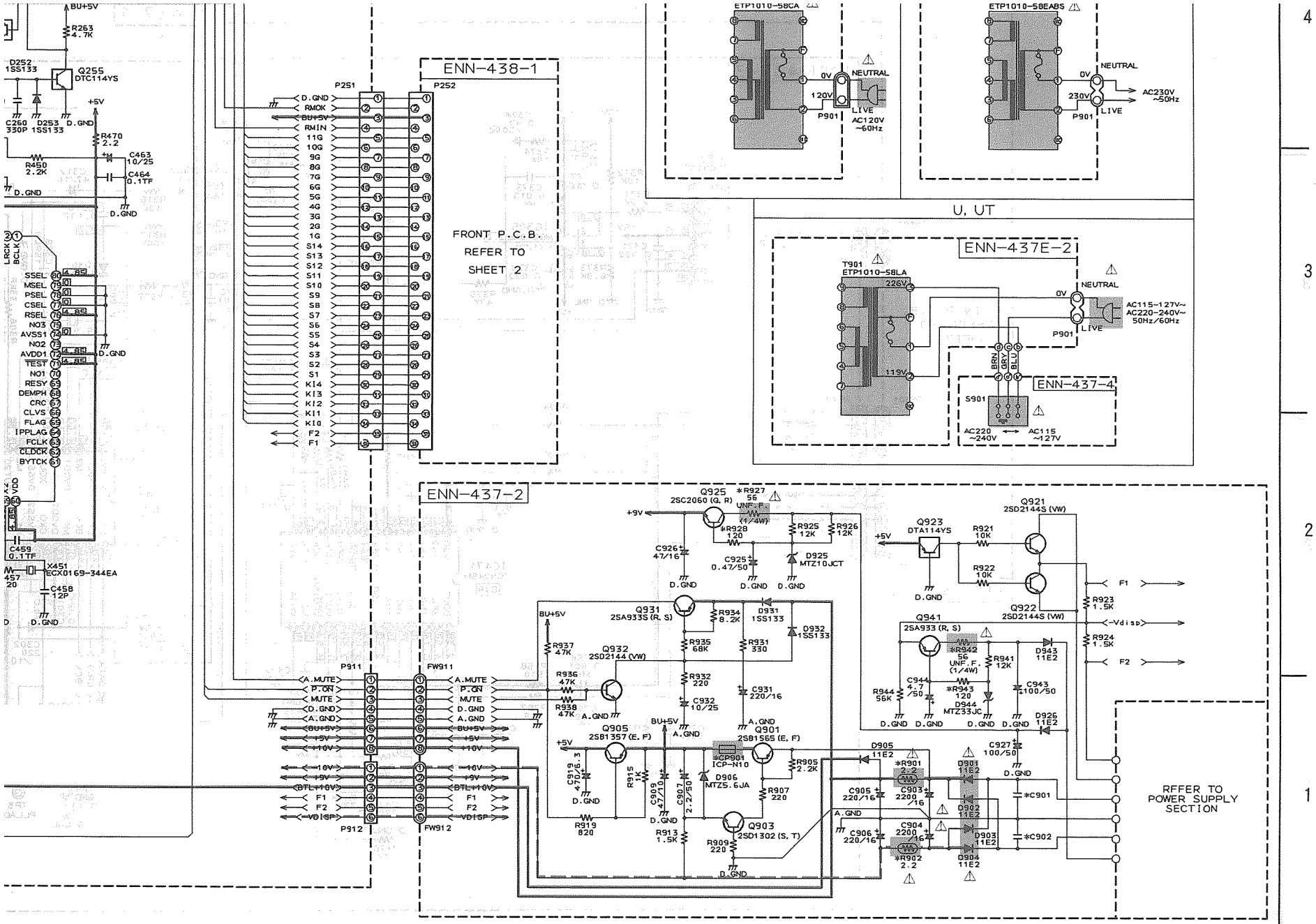

PICK UP OPTIMA-6
P551
RF & SERVO AMP
IC551
AN8806SB
TP1
GND (RF)
Q551
2SA950 (O, Y)
IC451
MN662720RB
DIGITAL SERVO
&
DIGITAL SIGNAL
PROCESSER
P851
REST SW
SM
FM
P852
LM
OPEN/CLOSE SW
IC852
TA8409F
BTL DRIVER
IC851
BA6398FP
BTL DRIVER
BU+5V
+5V
D.GND
A.GND
F
E
B+D
A+C
LDON
REST SW
CLOSE
OPEN
OPEN SW
CLOSE SW
FM+
FM-
SM+
SM-
LM+
LM-
FOD
KICK
VREF
TRD
TVD
TRV
ECS
ECM
TE
TRCRS
VDET
RFENV
ARF
A
B
C
D
E

P2-23-a

Schematic Diagram

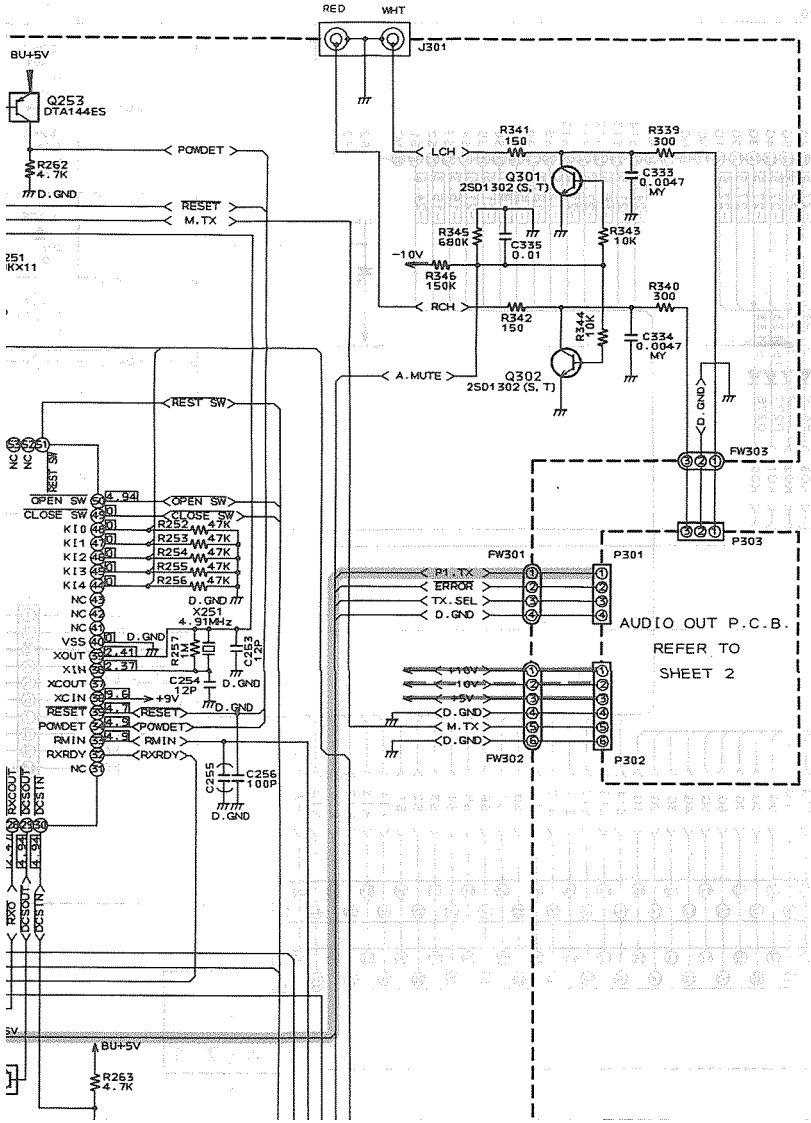
Power&Servo Section




ENN-438-1
FRONT P.C.B.
REFER TO
SHEET 2
U, UT
ENN-437E-2
ENN-437-4
ENN-437-2
ETP1010-58CA
ETP1010-58EABS
T901
ETP1010-58LA
P901
P251
P252
P911
FW911
P912
FW912
S901
Q925
2SC2060 (Q, R)
Q931
2SA933S (R, S)
Q932
2SD2144 (VW)
Q905
2SB1357 (E, F)
Q901
2SB1565 (E, F)
Q903
2SD1302 (S, T)
Q923
DTA114YS
Q921
2SD2144S (VW)
Q922
2SD2144S (VW)
Q941
2SA933 (R, S)
D925
MTZ10JCT
D944
MTZ33JC
D906
MTZ5.6JA
X451
ECX0169-344EA
RFFER TO
POWER SUPPLY
SECTION
AC230V
~50Hz
AC120V
~60Hz
AC115~127V~
AC220~240V~
50Hz/60Hz
AC220
~240V
AC115
~127V
NEUTRAL
LIVE
BU+5V
+5V
+9V
D.GND
A.GND
F1
F2
Vdisp

How to Use Schematic Diagrams

1. ——— indicates the +B line.
2. - - - - indicates the −B line.
3. ▒▒▒ indicates signal path.
4. Parts marked with ⚠ and those in the shaded area ▒▒▒ are parts for safety. Be sure to use one with the specified part number.
5. This is the standard circuit diagram. The circuits and circuit constants are subject to change for improvement without notice.

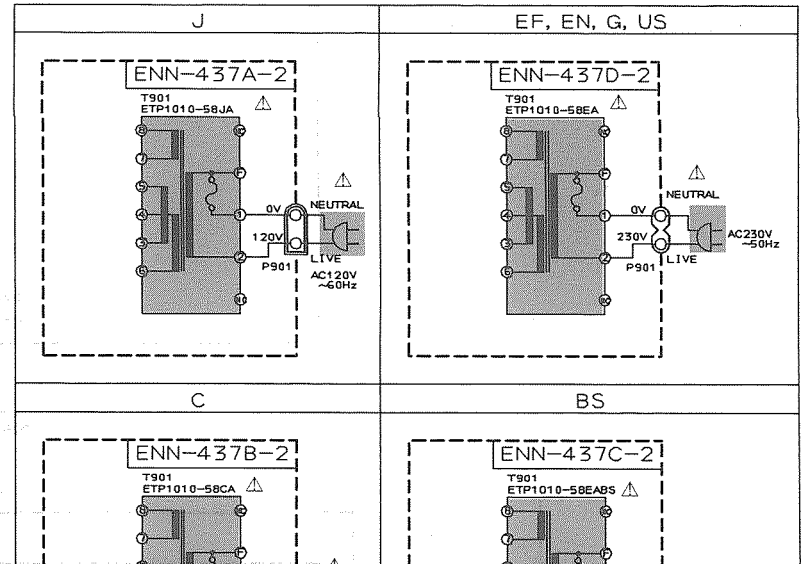


VERSION CODES

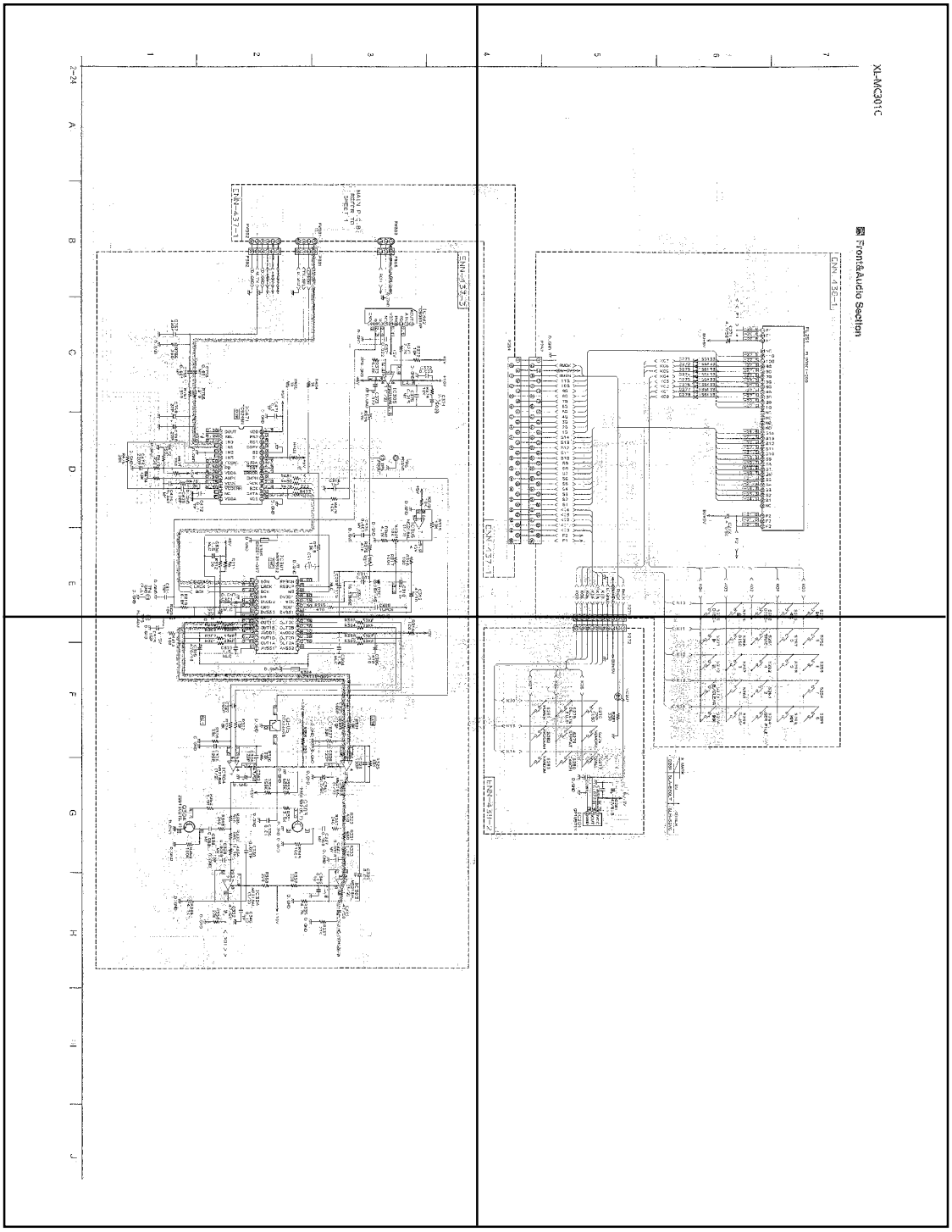
J	U.S.A.
C	CANADA
EN	NORDIC COUNTRIES
BS	U.K.
EF	CONTINENTAL EUROPE EXCEPT GERMANY AND ITALY
G	GERMANY
US	SINGAPORE
UT	TAIWAN
U	UNIVERSAL EXCEPT ALL OF ABOVES

* MARK

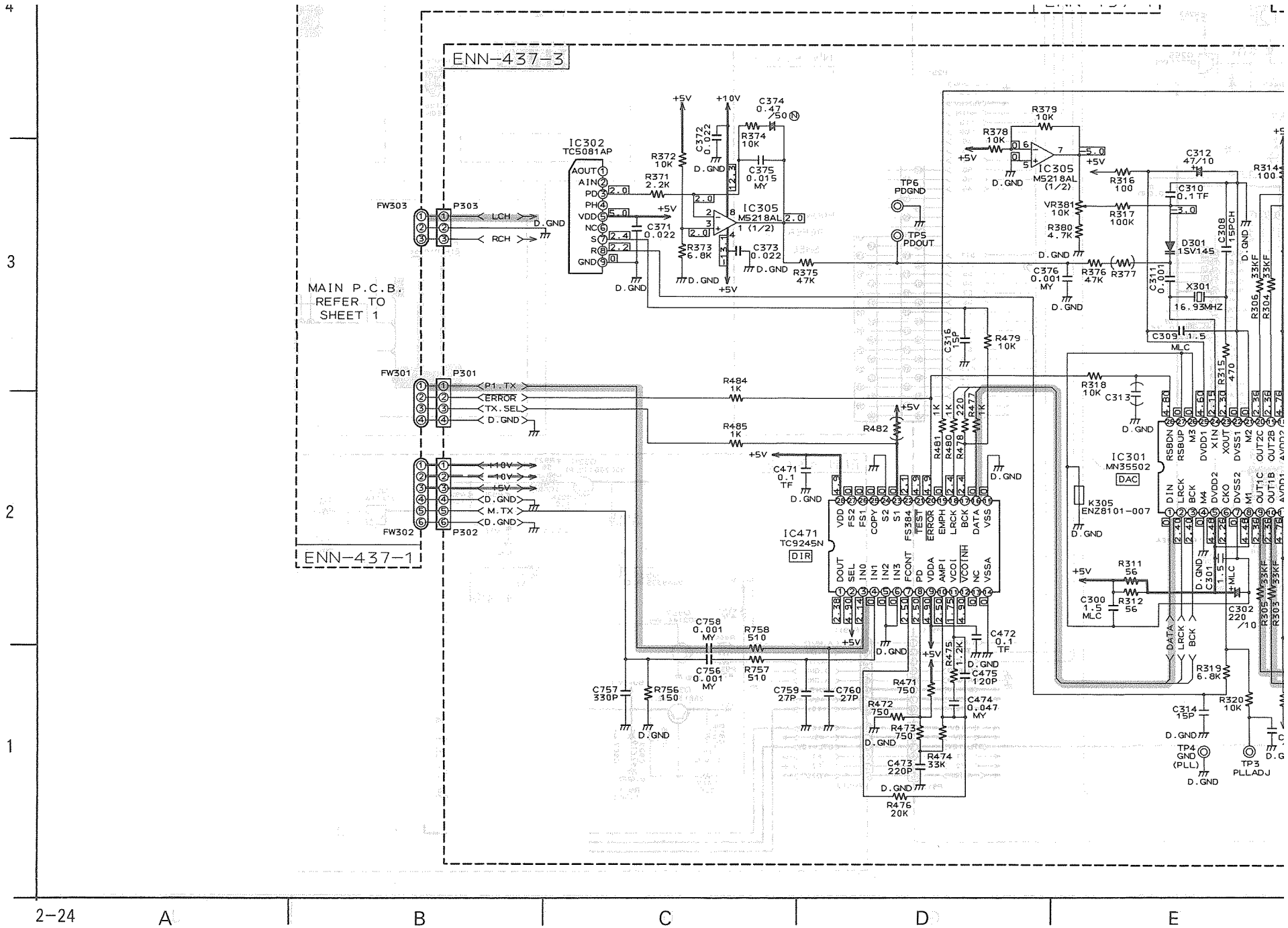
	J	C	BS	EF, EN G, US	U, UT
R901, 902	2.2 UNF.C.	2.2 POSISTER	2.2 POSISTER	2.2 POSISTER	2.2 POSISTER
CP901	SHORT	ICP-N10	ICP-N10	ICP-N10	ICP-N10
R927, 942	SHORT	56 UNF.F.	56 UNF.F.	56 UNF.F.	56 UNF.F.
R928, 943	SHORT	120	120	120	120
C901, 902	0.047	0.047	0.1 TF	0.1 TF	0.1 TF



P2-24-a P2-24-b

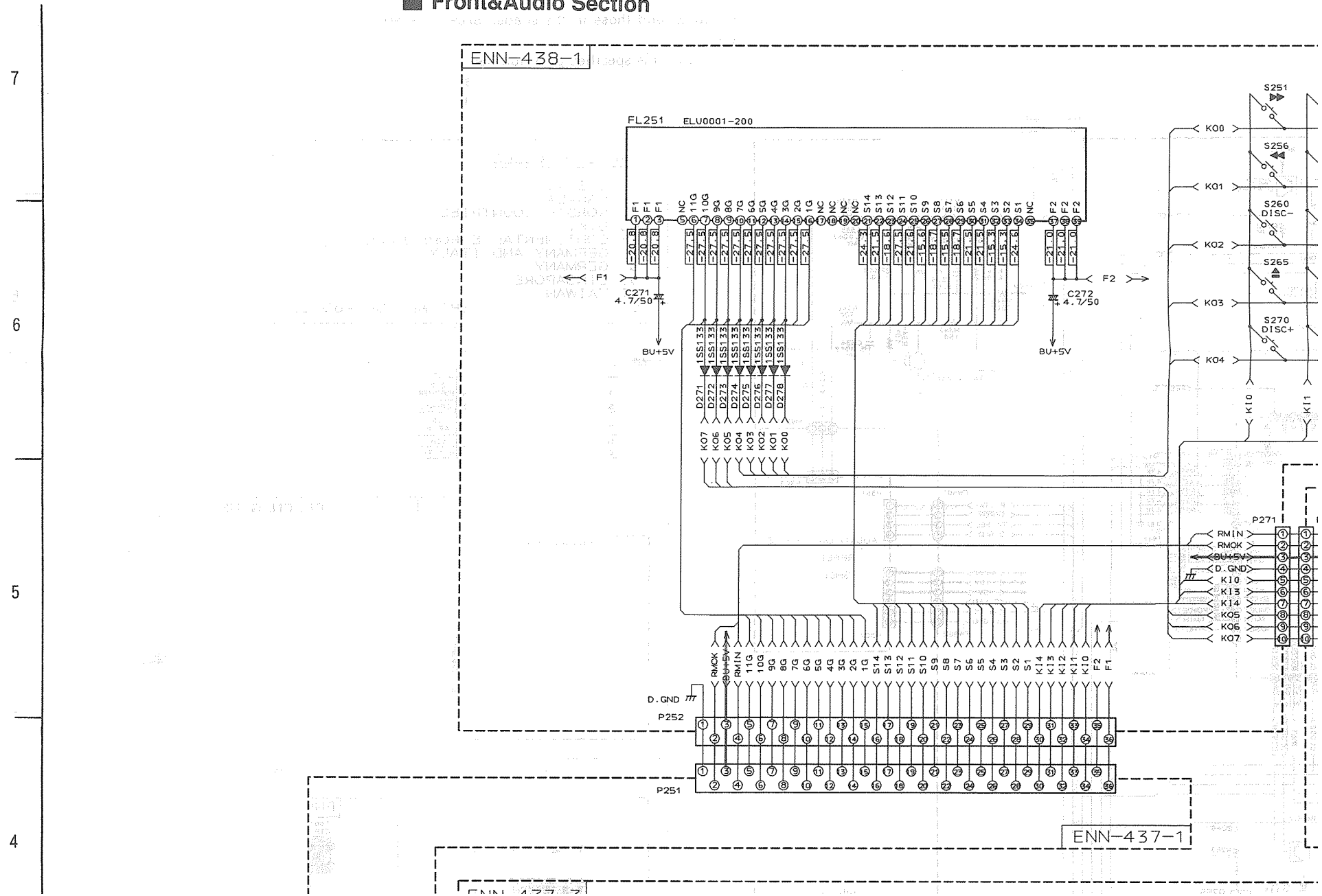


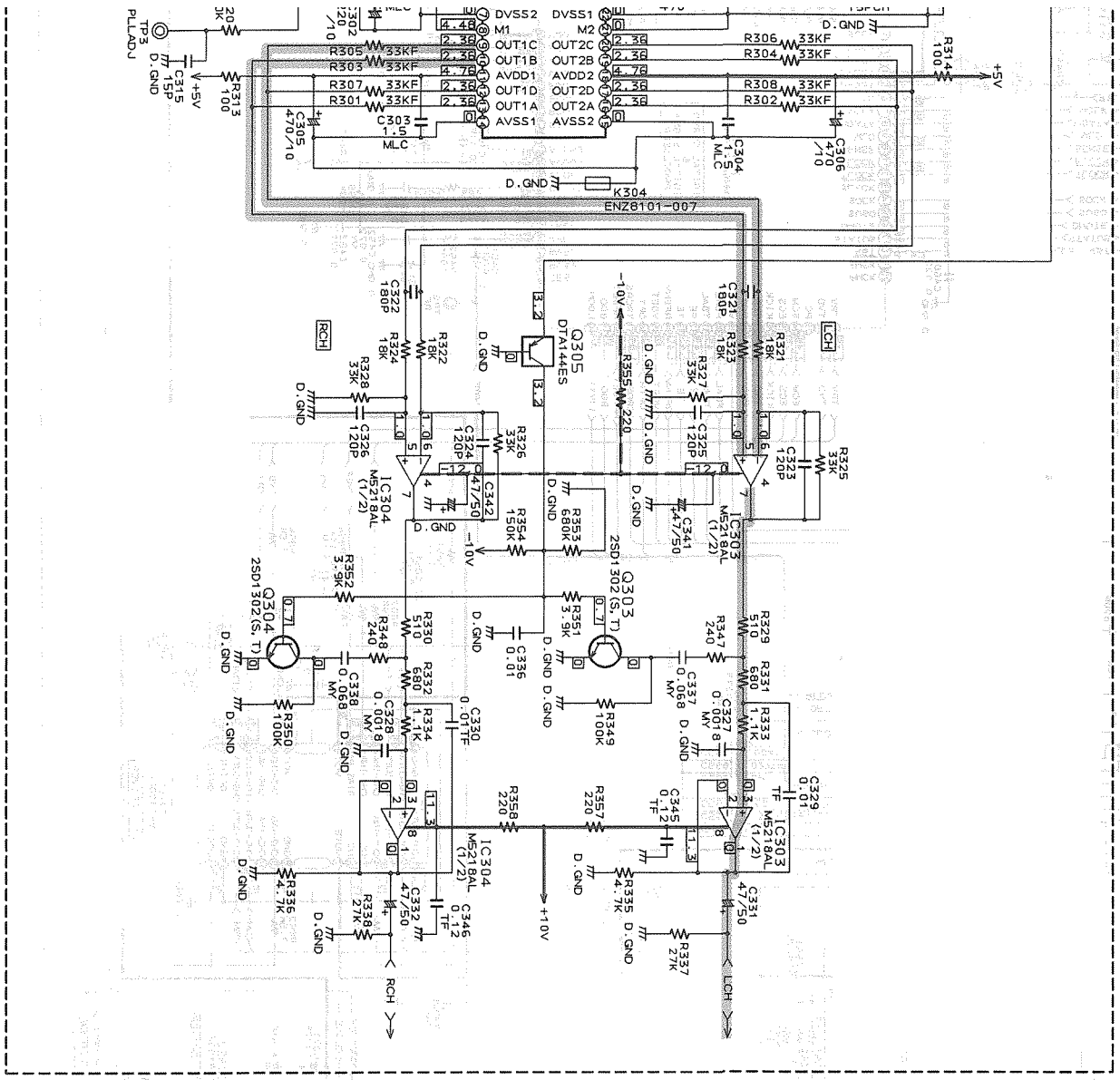
P2-24-c P2-24-d

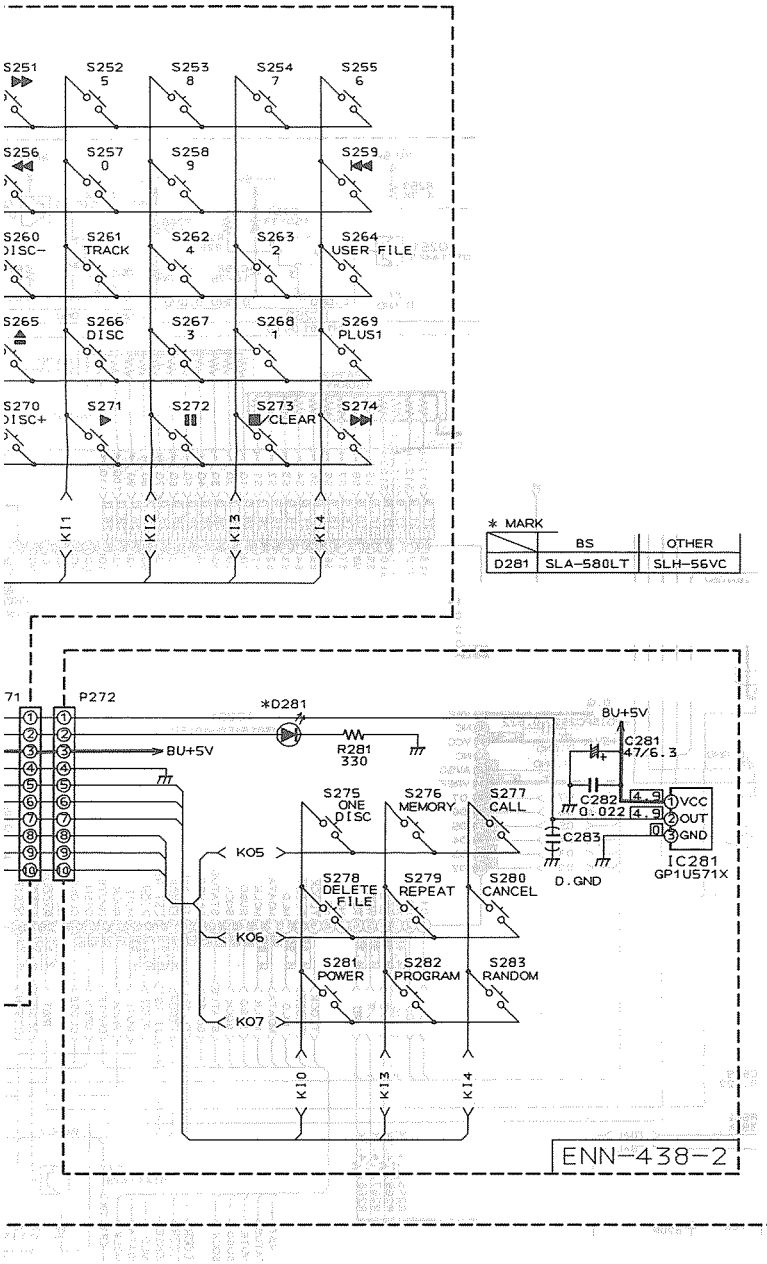

ENN-437-3
ENN-437-1
MAIN P.C.B.
REFER TO
SHEET 1
IC302
TC5081AP
IC305
M5218AL
(1/2)
IC471
TC9245N
DIR
IC301
MN35502
DAC
K305
ENZ8101-007
X301
16.93MHZ
D301
1SV145
TP6
PDGND
TP5
PDOUT
TP4
GND
(PLL)
TP3
PLLADJ
FW303
P303
LCH
RCH
FW301
P301
P1.TX
ERROR
TX.SEL
D.GND
FW302
P302
+10V
-10V
+5V
D.GND
M.TX
D.GND
D.GND
+5V
+10V
DATA
LRCK
BCK
4
3
2
1
A
B
C
D
E
2-24

P2-24-a

Front&Audio Section

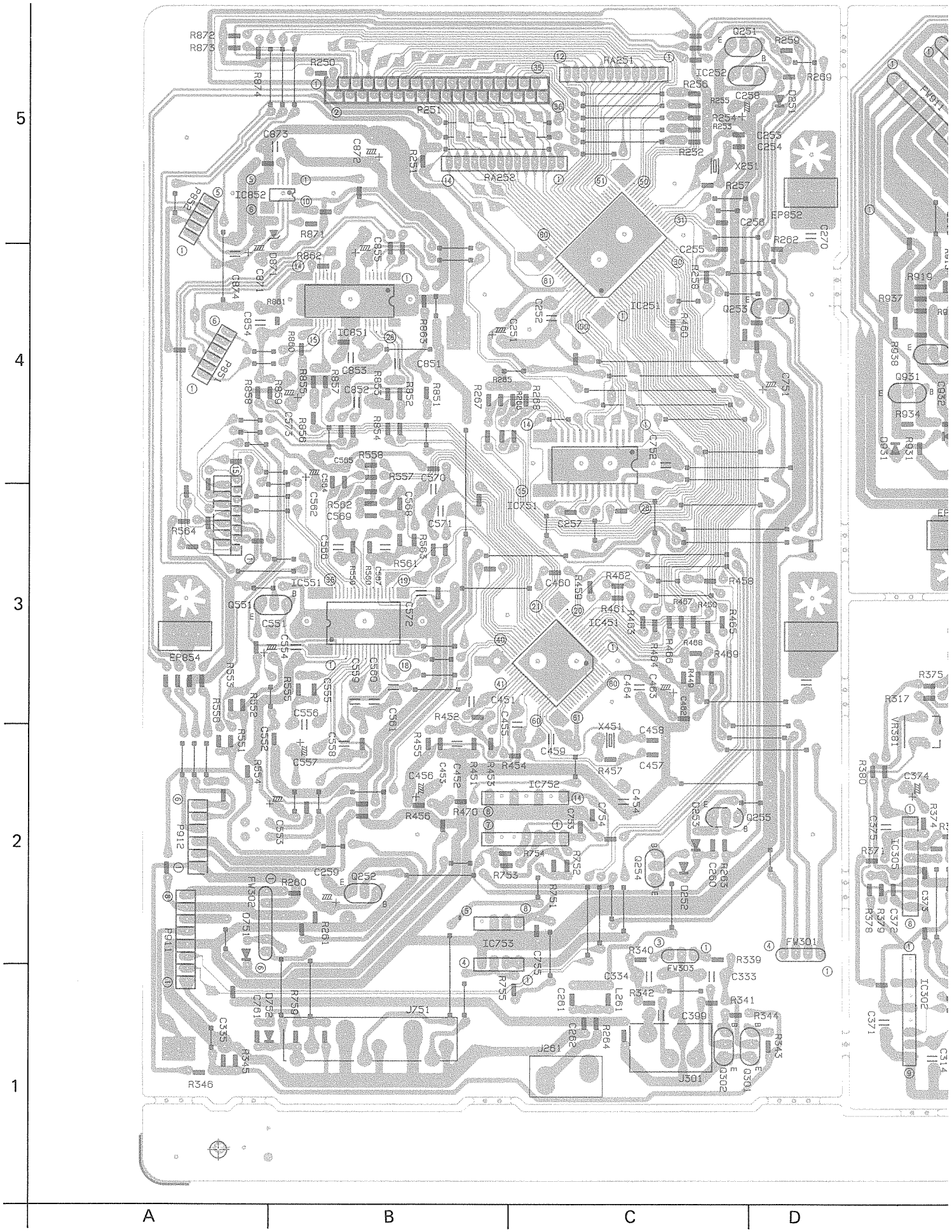


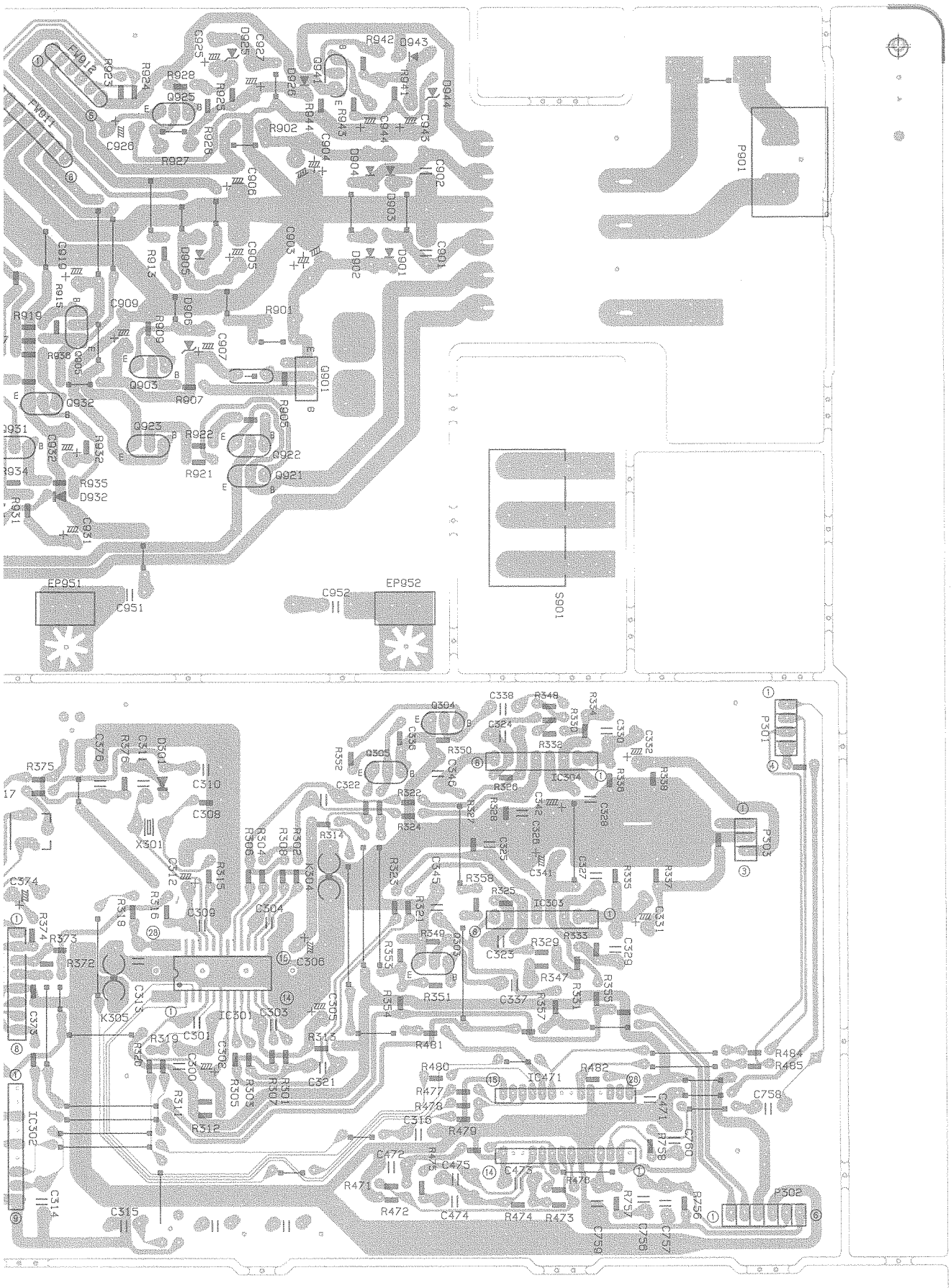

K304
ENZ8101-007
Q305
DTA144ES
Q303
2SD1302(S,T)
Q304
2SD1302(S,T)
IC303
M5218AL(1/2)
IC304
M5218AL(1/2)
RCH
LCH
D.GND
+5V
-10V
+10V


S251
S252
5
S253
8
S254
7
S255
6
S256
S257
0
S258
9
S259
S260
DISC-
S261
TRACK
S262
4
S263
2
S264
USER FILE
S265
S266
DISC
S267
3
S268
1
S269
PLUS1
S270
DISC+
S271
S272
S273
/CLEAR
S274
K11
K12
K13
K14
* MARK
BS
OTHER
D281
SLA-580LT
SLH-56VC
71
P272
*D281
BU+5V
R281
330
BU+5V
C281
47/6.3
C282
0.022
C283
D.GND
VCC
OUT
GND
IC281
GP1U571X
S275
ONE
DISC
S276
MEMORY
S277
CALL
S278
DELETE
FILE
S279
REPEAT
S280
CANCEL
S281
POWER
S282
PROGRAM
S283
RANDOM
KO5
KO6
KO7
K10
K13
K14
ENN-438-2

Printed Circuit Board

Main P.C.Board (ENN-437)





XL-MC301M

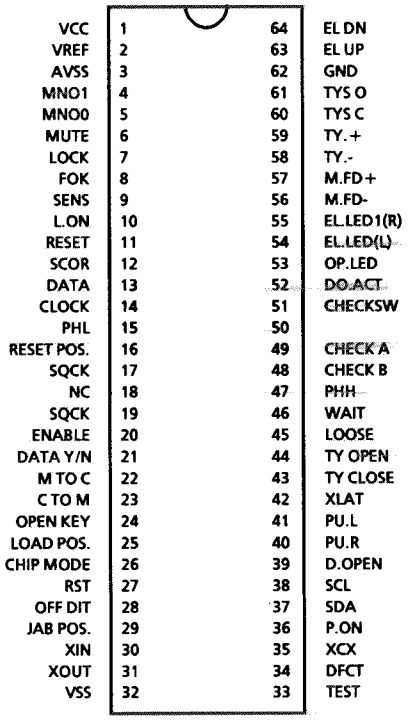
— Contents —

Discription of Major LSIs 3-2
Disassembly Procedures 3-9
Adjustment Procedures of mechanism 3-14
Adjustment Procedures of CD 3-16
Flow of Function Operation Until TOC is Read 3-17
Maintenance Laser Pick up/mecha check mode 3-18
Mecanism check mode 3-19
Motor height 3-20
Causes for mechanism malfunctions 3-21
Block Diagram 3-22
Schematic Diagrams 3-23
Printed Circuit Boards 3-24

Description of Major LSIs

■ M38022E4SP(IC201) : MECHANISM CONTROLLER

1. Terminal Layou



2. Description

Pin No.	Symbol	I/O	Description	Pin NO.	Symbol	I/O	Description
1	VCC	--	Power supply	33	TEST	--	Pull up
2	VREF	O	Reference voltage output pin	34	DFCT	O	"H"with focus searching
3	AVSS	--	Analog GND	35	XCX	O	"H"with tracking loop is off
4	MNO1	--	Pull up	36	P.ON	O	H: power off ,L: power on
5	MNO0	--	Connect GND	37	SDA	I/O	Data communication with IC202
6	MUTE	O	Muting signal	38	SCL	I/O	READ/WR clock communication with IC202
7	LOCK	I	Lock signal	39	D.OPEN	I	H; door open L; close
8	FOK	I	Forcus ok signal	40	PU.R	I	Turn-table base mech. position detect L:right
9	SENS	I	Sens signal	41	PU.L	I	Turn-table base mech. position detect L:left
10	L.ON	O	Turns on laser	42	XLAT	O	Latch signal for data transmission
11	RESET	I	Reset signal	43	TY CLOSE	O	Tray close signal
12	SCOR	I	Subcord synchronizing signal	44	TY OPEN	O	Tray open signal
13	DATA	O	Serial data for signal processor	45	LOOSE	I	Door lock detect L: open
14	CLOCK	O	Clock output for data transmission	46	WAIT	I	Door lock detect L: lock
15	PHL	I	Elevator position detect	47	PHH	--	Non connection
16	RESET POS.	I	Reset position detect	48	CHECK B	I	Check mode selct (puul up)
17	SQCK	O	Clock output for data transfers	49	CHECK A	I	Check mode selct (puul up)
18	NC	--	Non connection	50		--	Pull up
19	SQCK	I	Input of Q-data of subcode	51	CHECKSW	--	Switch for check mode
20	ENABLE	--	Non connection	52	DO.ACT	O	Pull up
21	DATA Y/N	--	Pull up	53	OP.LED	O	Door indicatpr
22	M TO C	I	Communication signal from mech.	54	EL.LED(L)	O	Elevator LED(rigth)
23	C TO M		Communication signal TO mech.	55	EL.LED1(R)	O	Elevator LED(left)
24	OPEN KEY	I	Door open key key detect	56	M.FD-	O	Feed driving control signal
25	LOAD POS.	I	This pin becomes"L"when the tray loaded	57	M.FD+	O	Feed driving control signal
26	CHIP MODE	--	Pull down	58	TY.-	O	"H"wiyh the tray opening
27	RST	O	Reset signal output	59	TY.+	O	"H"wiyh the tray closing
28	OFF DIT	--	Connect GND	60	TYS C	O	Tray stopper close signal
29	JAB POS	I	This pin becomes"L"when the tray returned	61	TYS O	O	Tray stopper open signal
30	XIN	I	Performs crystal oscillation	62	GND	--	GND
31	XOUT	O	Between XI and XO	63	EL UP	O	Lifter driving control sihnal
32	VSS	--	GND	64	EL DN	O	Lifter driving control sihnal

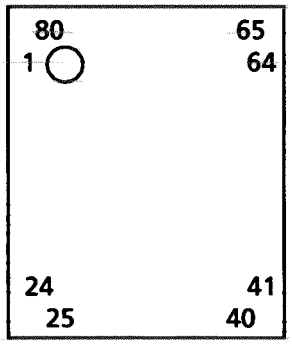
■ CXD2500BQ(IC401) : Digital Signal Processor

1. Outline

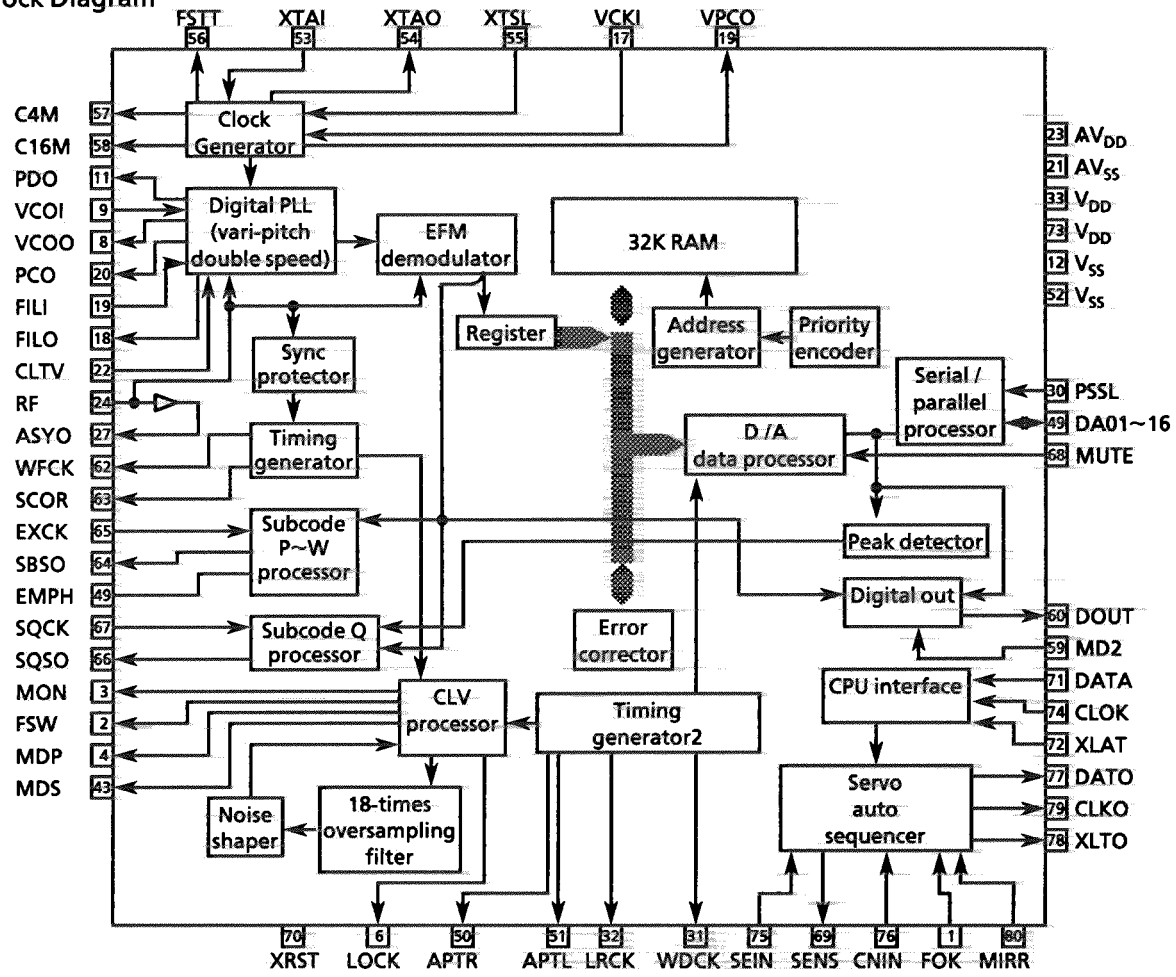
The CXD2500BQ is a digital signal processsing LSI designed for use in compact disc players. It has the following functions:

- All digital signals for regeneration are processed using one chip.
- The built-in RAM enables high-integration mounting.
- Generation by the use of a digital PLL of bit clock pulses for strobing the EFM signal.
- EFM data demodulation
- Subcode demodulation and subcode Q data error detection
- Digital spindle servo system (incorporating an oversampling filter)

2.Terminal Layout (TopView)



3.Block Diagram



Notes:

- The data at the 64-bit slot is output in 2's complements on an LSB-first basis. The data at the 48-bit slot is output in 2's complements on an MSB-first basis.
- GTOP monitors the state of Frame Sync protection. ("H" : Sync protection window released)
- XUGF is a negative Frame Sync pulse obtained from the EFM signal before Frame Sync protection is effected.
- XPLCK is an inversion of the EFM PLL clock. The PLL is designed so that the falling edge of XPLCK coincides with a change point of the EFM signal.
- The GFS signal turns "H" upon coincidence between Frame Sync and the timing of interpolation protection.
- RFCK is a signal generated at 136-µs periods using a crystal oscillator.
- C2PO is a signal to indicate a data error.
- XRAOF is a signal issued when a jitter margin of ± 28F is exceeded by the 32K RAM.

4. Pin Function Description

Pin No.	Symbol	I/O	Description
1	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
2	FSW	O	Non connection
3	MON	O	Output for spindle motor ON / OFF control.
4	MDP	O	Output for spindle servo control.
5	MDS	O	Output for spindle servo control (Non connection).
6	LOCK	O	This terminal is "H"when the GFS signal sampled at 460Hz is "H".It turns "L" when the GFS signal turns out "L" 8 or more times in succession.
7~9	—	--	Non connection
10	TEST	I	Test pin (Normally at 0V)
11	PDO	O	Output of charge pump for analog EFM PLL (Non connection).
12	Vss	--	GND
13~16	—	--	Non connection
17	VCKI	I	Clock input from external VCO for vari-pitch control.fc=16.9344MHz. Connected to GND.
18	FILO	O	Output of filter for masterPLL (Slave=Digital PLL)
19	FILI	I	Input to filter for master PLL.
20	PCO	O	Output of charge pump for master PLL.
21	AVss	--	Analog GND
22	CLTV	I	VCO control voltage input for master PLL.
23	AV_{DD}	--	Analog power supply
24	RF	I	EFM signal input
25	TEST2	I	TEST pin (Connected to GND)
26	TEST3	I	TEST pin (Connected to GND)
27	ASYO	O	EFM full-swing output
28	TEST4	I	TEST pin (Connected to GND)
29	NC	--	Non connection
30	PSSL	I	Input used to switch the audio data output mode."L" for serial output,"H" for parallel output.
31	WDCK	O	D / A interface for 48-bit slot. Word clock f=2Fs.
32	LRCK	O	D / A interface for 48-bit slot. LR clock f= Fs.
33	V_{DD}	--	Power supply
34	DATA	O	Output DA16(MSB) when PSSL=1 or serial data from 48-bit slot(2's completements,MSB first) when PSSL=0.
35	BCLK	O	Output DA15 when PSSL=1 or bit clock from 48-bit slot when PSSL=0.
36~51	—	--	Non connection
52	VSS	--	GND
53	XTAI	I	Input of 16.9344MHz Xtal oscillation circuit or 33.8688MHz input.
54	XTAO	O	Output of 16.9344 MHz Xtal oscillation circuit.
55	XTSL	I	Xtal selection input pin. "L" for 16,344MHz Xtal, "H" for 33.8688 MHz Xtal.
56~58	—	--	Non connection
59	MD2	I	Digital-Out ON/OFF control. "H" for ON, "L" for OFF.
60	DOUT	O	Digital-Out output pin. Non connection
61,62	—	--	Non connection
63	SCOR	O	Turns "H" when subcode Sync S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P ~ W.
65	EXCK	I	Clock input for reading SBSO.
66	SQSO	O	Outputs 80-bit Sub Q and 16-bit PCM peak-level data.
67	SQCK	I	Clock input for reading SQSO.
68	MUTE	I	"H" for muting, "L" for release.
69	SENS	O	SENS output to CPU.
70	XRST	I	System reset. "L" for resetting.
71	DATA	I	Inputs serial data from CPU.
72	XLAT	I	Latches serial data input from CPU at falling edge.
73	V_{DD}	--	Power supply(+5V)
74	CLOK	I	Inputs serial data transfer clock from CPU.
75	SEIN	I	Inputs SENSE from SSP(IC601). SSP : Servo Signal Processor
76	CNIN	I	Inputs track jump count signal.
77	DATO	O	Outputs serial data to SSP.
78	XLTO	O	Latches serial data output to SSP at falling edge.
79	CLKO	O	Outputs serial data transfer clock to SSP.
80	MIRR	I	Inputs mirror signal to be used by auto sequencer when jumping 128 or more tracks.

■ CXA1372S (IC601) : Servo Signal Processing Amplifier

1.Outline

The CXA1372S is a bipolar IC developed for RF signal processing (focus OK, mirror, defect detection, EFM comparator) and servo control.

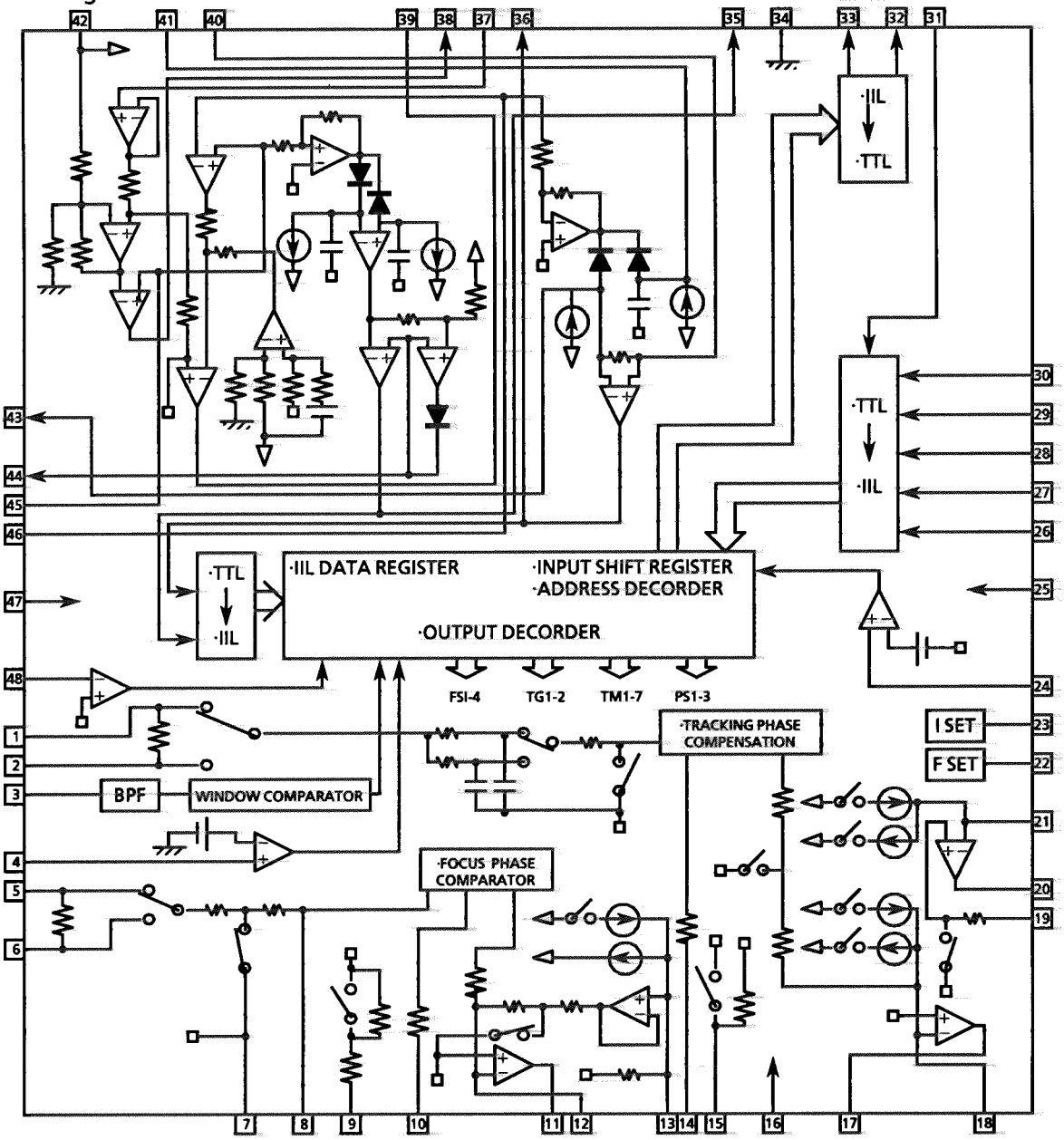
2.Functions

- Auto asymmetry control
- Focus OK detection circuit
- Mirror detection circuit
- Defects detection, counter measures circuit
- EFM comparator
- Focus servo control
- Tracking servo control
- Sled servo control

3.Terminal Layout

TE	1	48	TZC
TDFCT	2	47	DVEE
ATSC	3	46	RFO
FZC	4	45	RFI
FE	5	44	CP
FDFCT	6	43	CB
VC	7	42	DVCC
FGD	8	41	CC2
FS3	9	40	CC1
FLB	10	39	FOK
FEO	11	38	EFM
FE−	12	37	ASY
SRCH	13	36	DFCT
TGU	14	35	MIRR
TG2	15	34	DGND
AVCC	16	33	SENS
TAO	17	32	C.OUT
TA−	18	31	XRST
SL+	19	30	DATA
SLO	20	29	XLT
SL−	21	28	CLK
FSET	22	27	LOCK
ISET	23	26	DIRC
SSTOP	24	25	AVEE

4.Block Diagram

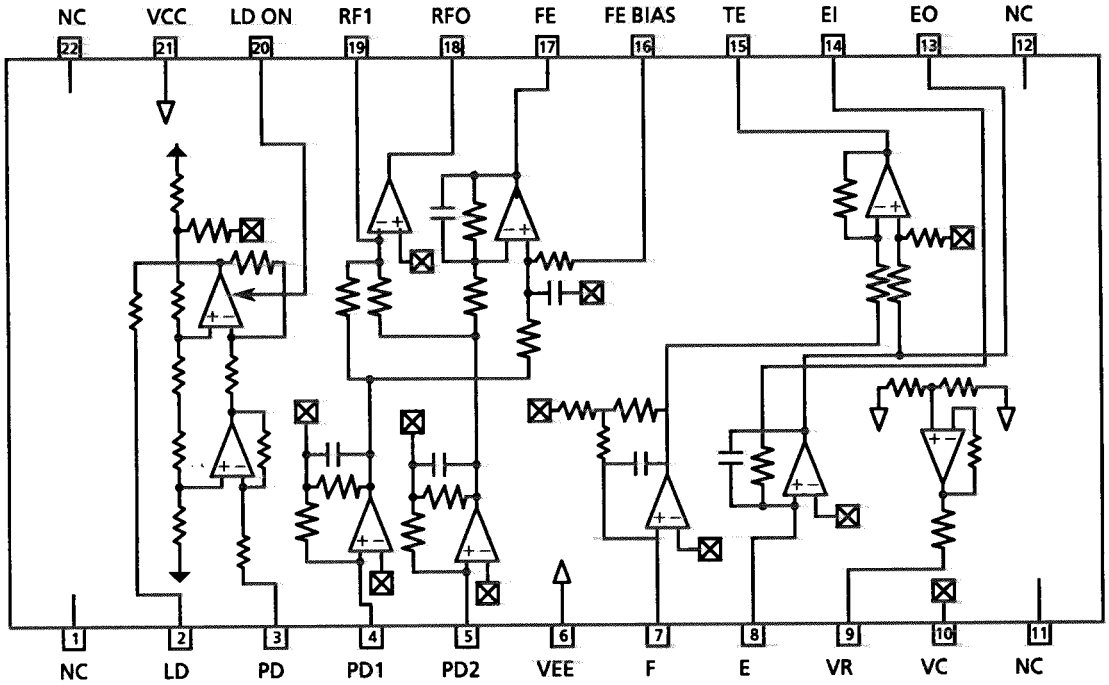


5.Pin Function Description

Pin No	Symbol	I/O	Description
1	TE	I	Input pin of tracking error amplifier.
2	TDFCT	I	Capacitor connecting pin for time constant during defects.
3	ATSC	I	Window comparator input pin for ATSC detection.
4	FZC	I	Pin for focus zero-cross comparator input.
5	FE	I	Input pin of focus error.
6	FDFCT	I	Capacitor connecting pin for time constant during defect functions.
7	VC	I	Center voltage input pin. For dual power: GND For single power supply: (VCC+GND)/2
8	FGD	I	Connect a capacitor between this pin and pin3 to reduce high-frequency gain.
9	FS3	I	The high-frequency gain of the focus servo is switched through FS3 ON and OFF.
10	FLB	I	Time constant external pin to raise the low bandwidth of the focus servo.
11	FEO	O	Focus drive output.
12	FE-	I	Inverse input for focus amplifier.
13	SRCH	I	Time constant external pin for formation of focus search waveform.
14	TGU	I	Time constant external pin for the selection of tracking high band gain.
15	TG2	I	Time constant external pin for the selection of tracking high band gain.
16	AVCC	--	Power supply
17	TAO	O	Tracking drive output.
18	TA-	I	Inverse input pin for tracking amplifier.
19	SL+	I	Non- inverse input pin for sled amplifier.
20	SLO	O	Sled drive output.
21	SL-	I	Inverse input pin for sled amplifier.
22	F SET	I	Pin to set peak frequency of focus tracking phase compensation and fo of CLV LPF.
23	I SET	I	Current is input to determine focus search, track jump, and sled kick height.
24	S STOP	I	Limit SW ON/OFF signal detection pin for disc inner periphery detection.
25	AVEE	--	−5V
26	DIRC	I	Pin for one-track jump. Contains 47kΩpull-up resistor.
27	LOCK	I	At "L" sled runaway prevention circuit operate. Contains a 47kΩpull-up resistor.
28	CLK	I	Serial data transfer clock input from CPU.
29	XLT	I	Latch input from CPU.
30	DATA	I	Serial data input from CPU.
31	XRST	I	Reset input pin, reset at "L".
32	C.OUT	O	Track number count signal output.
33	SENS	O	Outputs FZC, AS, TZC and S STOP through command from CPU.
34	DGND	--	GND
35	MIRR	O	MIRR comparator output pin.
36	DFCT	O	Output pin of DEFECT comparator.
37	ASY	I	Input pin of auto asymmetry control.
38	EFM	O	Output pin of EFM comparator.
39	FOK	O	Output pin of FOK comparator.
40	CC1	I	Output pin of DEFECT bottom hold.
41	CC2	O	Input pin for the capacitance coupled output of DEFECT bottom hold.
42	DVCC	--	−5V
43	CB	I	Connection pin of DEFECT bottom hold capacitor.
44	CP	I	Connecting pin of MIRR hold condenser. Non-inverted input pin of MIRR comparator.
45	RFI	I	Input pin with coupling capacitor where RF summing amplifier output is connected.
46	RFO	O	Output pin of RF summing amplifier and check point of eye pattern.
47	DVEE	--	−5V
48	TZC	I	Input pin of tracking zero-cross comparator.

■ CXA1571S(IC501) : RF AMP

1. Block Diagram

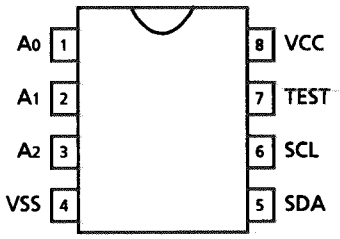


2. Pin Description

Pin No.	Symbol	I/O	Description
2	LD	O	APC(Automatic Power Control) amp output pin.
3	PD	I	APC amp input pin.
4 5	PD1 PD2	I I	RF I-V amp inverted input pins; they are connected to the A+C and B+D pins of the photodiode and receive current input.
7 8	F-IN E-IN	I I	F and E I-V amp inverted input pin; they are connected to Photodiodes F and E and receive current input.
9	VR	O	(VCC+VEE) / 2 DC voltage output pin.
10	VC	I	VC intermediate voltage input pin; when dual ±5V power supplies are used, this pin is connected to GND; for a single +5V power supply, it is connected to the VR pin.
13	EO	O	Monitor output pin for I-V amp E.
14	EI	I	Gain adjustment pin for I-V amp E.
15	TE	O	Tracking error amp. output pin.
16	FE-BIAS	I	Bias adjustment pin for the mon-inverted side of the focus error amp.
17	FE	O	Focus error amp. output pin.
18	RF O	O	RF amp output pin.
19	RF I	I	RF inverted side input pin; the resister connected between this pin and the RFO pin determines the gain of theRF amp.
20	LD-ON	I	This pin switches the APC amp on / off: on for VCC, off for ground.

■ AT24C16-10PC
(IC202) : Serial Eeprom

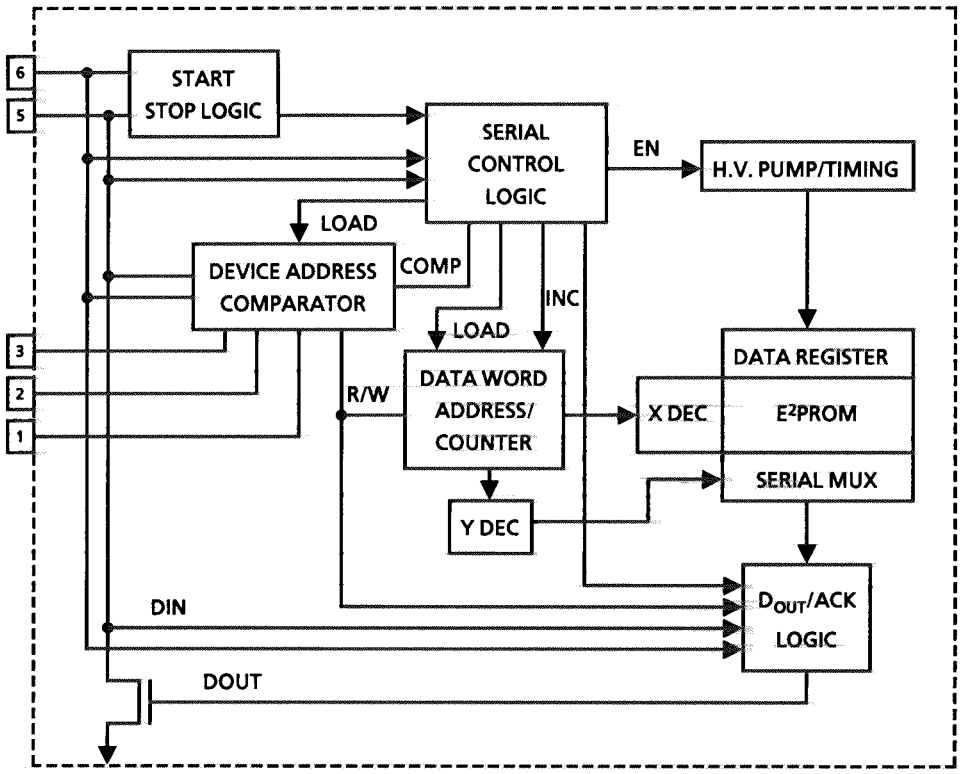
1. Terminal Layout



2. Terminal Functions

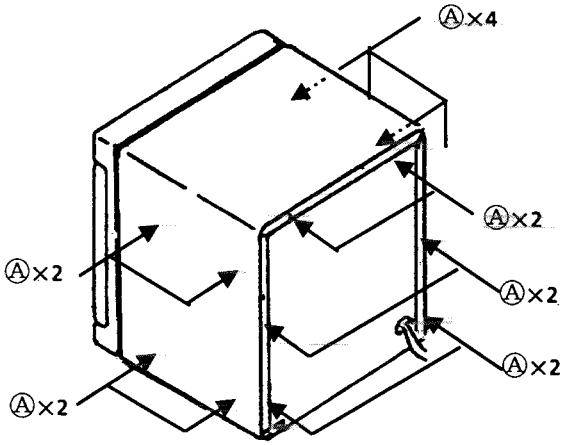
Pin No.	Symbol	Functions
1~3	A_0~A_2	ADDRESS INPUT (NOT USED)
4	VSS	GND
5	SDA	SERIAL DATA
6	SCL	SERIAL CLOCK
7	TEST	TEST PIN (CONNECTED TO GND)
8	VCC	POWER SUPPLY

3. Block Diagram



Disassembly Procedures

(1) Top cover removal
1. Remove 6 screws Ⓐon the rear side and 4 screws Ⓐ on both sides of the cover.
2. Remove the cover.



Ⓐ Fig1 Ⓐ×2

(2) Rear panel removal
1. Remove the top cover.
2. Remove the 9 screws Ⓑ.
3. Remove the rear panel.

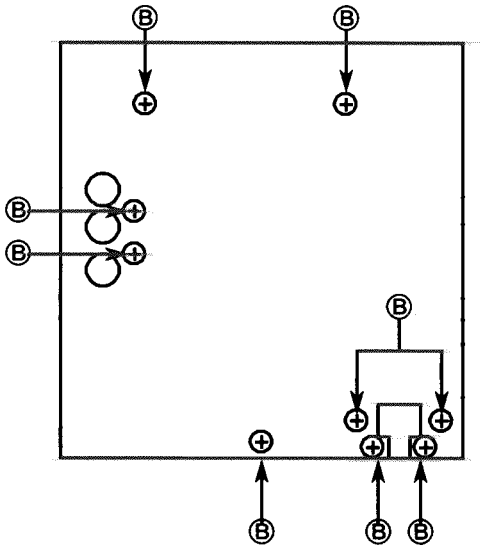


Fig2 Rear view

(3) Front panel removal
1. Do the (1).
2. Remove the 3 screws Ⓐ of the bottom side.
3. Remove the screw Ⓒ and fasners Ⓓ.
4. Remove the Front panel ass'y.

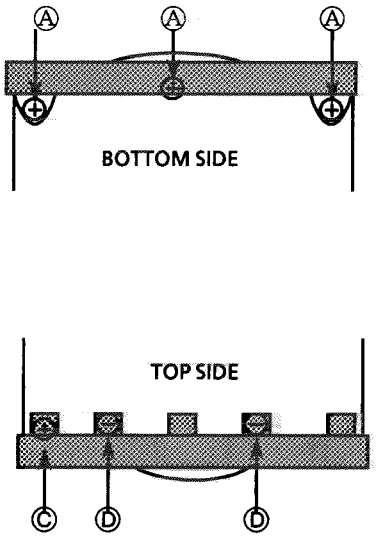


Fig 3 Front panel view

(4) Bottom base removal
1. Do the (1) (2)and(3).
2. Remove the 3screws Ⓐ and screw Ⓔ.
3. Remove the bottom base.

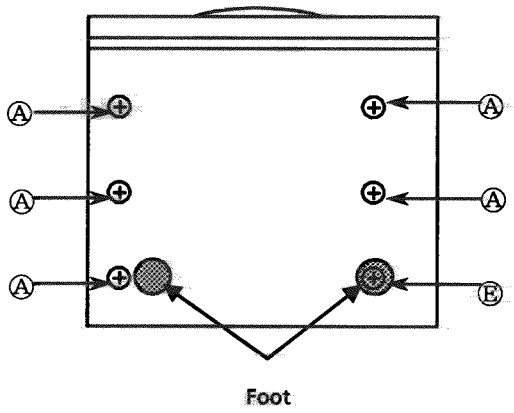


Fig 4 Bottom view

Ⓐ .. SBSG3008M Ⓑ ... E73273-006 Ⓑ ... GBSG3008Z Ⓓ ... GBSG3008Z

(5) CD PCB(ENN-439-1) removal
1. Do the (1) (2).
2. Remove the screw Ⓐ holding the OUT PUT P.C. Board(ENN-439-4).
3. Remove the connectors P601,P811 and flatwire P101,P801.
4. Remove the 4 screws Ⓕ holding the CD P.C. Board.
5. Remove the CD P.C. Board(ENN-439-1).

(6) CD mechanism Ass'y removal
1. Do the (1) (2) (5).
2. Rotate the B gear shown in Fig.8,and move the loding mecha ass'y to the top.
3. Rotate the Gear A shown in Fig.6 and move the CD mechanism ass'y to right side.
4. Remove the screw Ⓕ.
5. Remove the connector P603,and flatwire P501.
6. Remove the CD mechanism ass'y.

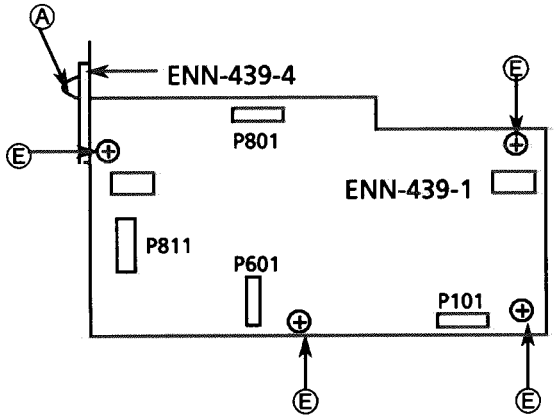


Fig 5. Rear View

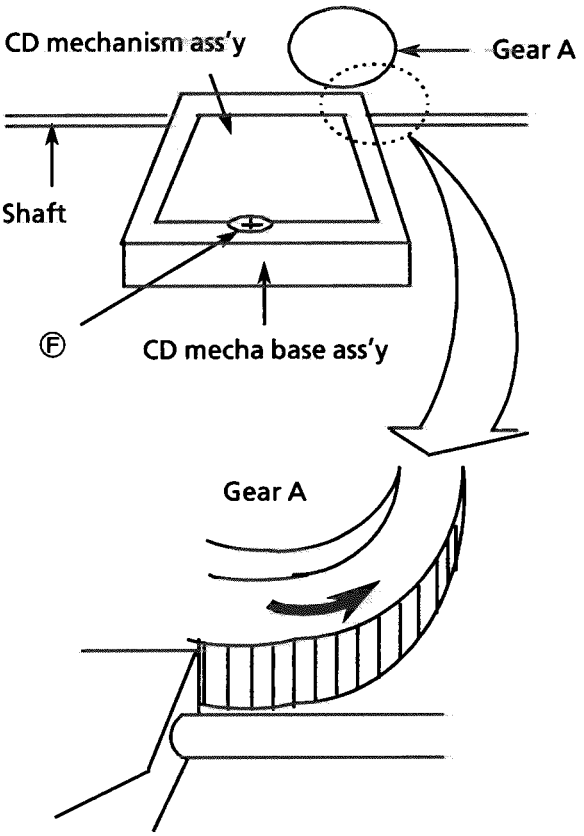


Fig 6 CD mecha base ass'y view

[NOTICE]
Do not bend P601 and P801 in case of handling.

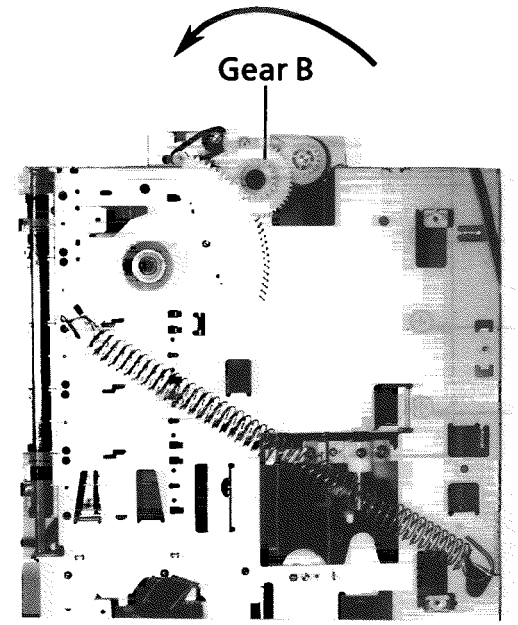


Fig 8 Elevator mechanism ass'y view

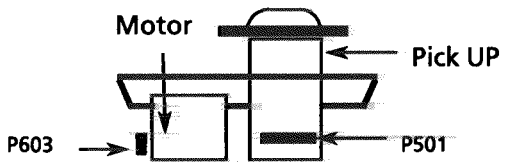


Fig 7. CD mechanism ass'y View

Ⓐ .. SBSG3008M Ⓔ ... SBSG3008Z Ⓕ ... E65923-003

(7) CD mecha base ass'y removal

1. Do the (1) (2) (5) (6) .
2. Remove 2 screws Ⓖ securing the shaft of the both sides (Fig 9).
3. Remove the CD mecha base and shaft.

(8) Loding mecha ass'y removal

1. Do the (1) (2) (5) .
2. Rotate the Gear B so that the loading mecha can be set at the location shown in Fig.9 when you look the unit from its side.
3. Remove the screw Ⓘ holding the movingholder..
4. Remove 7 screws Ⓗ. securing the elevator belts of the both sides
5. Remove 7 screws Ⓗ. securing the elevator belts of the both sides
6. Pull the loding mecha from rear side of the unit after lifting down the mecha to the bottom.

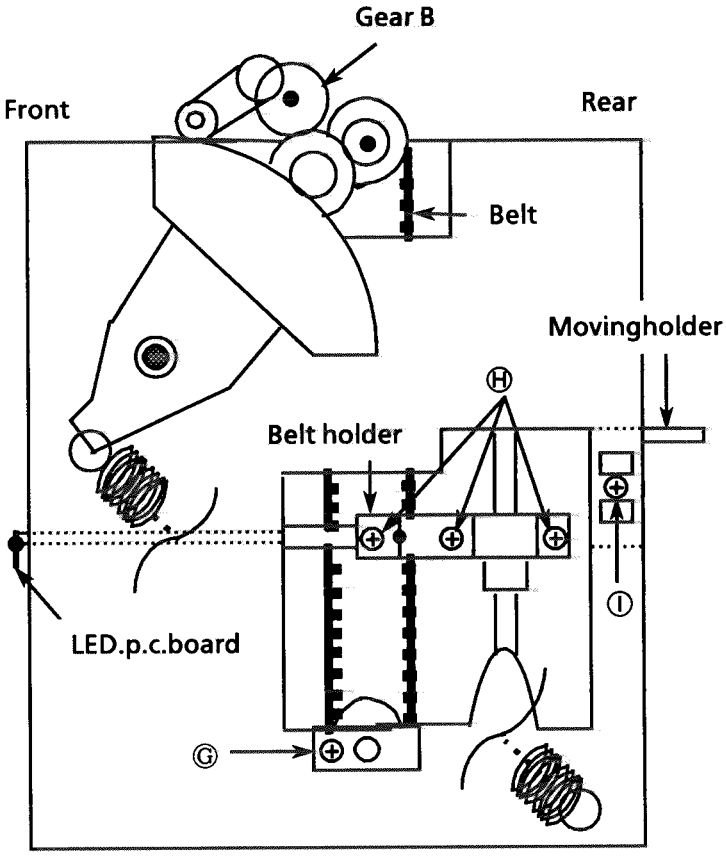


Fig9 Erevator mecha ass'y view

(9) Main gear removal

1. Do the (1) (3) (4) .
2. Remove 3 screws Ⓙ and connectors P823,P812,P813.
3. Remove the sw. P.C.Board(ENN-493-1).
4. Remove slit washers Ⓚ.
5. Remove the sw lever and gear C.
6. Remove the sw main giar.

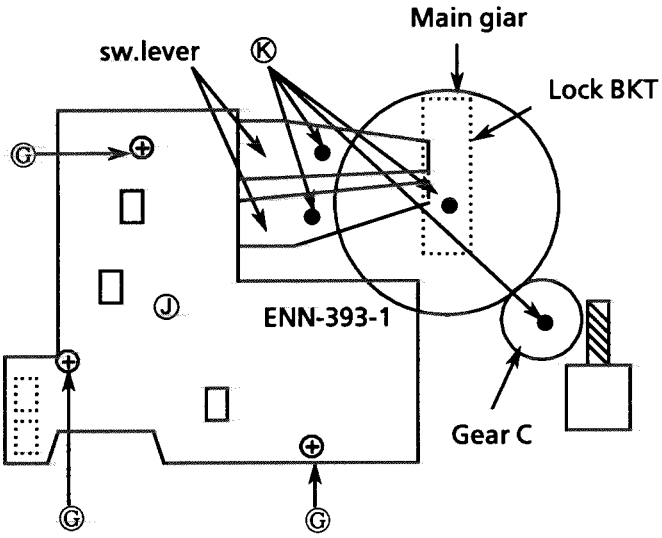


Fig10 Bottom view

Ⓖ .. SBST2606Z Ⓗ ... E407682-001 Ⓘ ... SBST2610Z

(10)Mount the main gear

1. Move the link assy shown in Fig 11 .
2. Move the lock BKT shown in Fig 11 .
3. Remove the bottom base.
4. Insert the main gear to studA shown Fig 10.
5. Install the slit washer.

(11)Mount the SW lever

1. Insert the sw lever A boss to the mein gearA' position shown in Fig 12 .
2. Install the slit washer .
3. Insert the sw lever B boss to the mein gear B' position shown in Fig 12 .
4. Install the slit washer to the stud A.

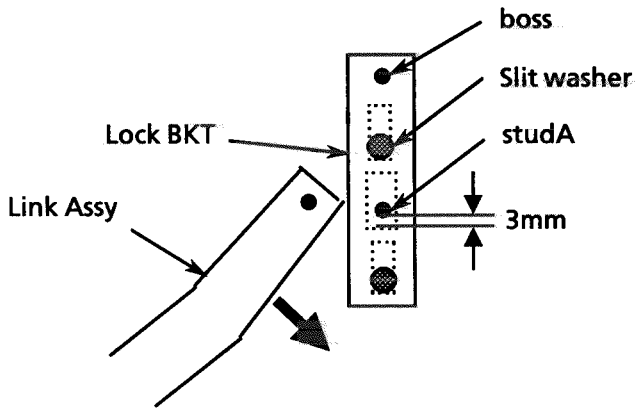


Fig 11 CD mecha base ass'y view

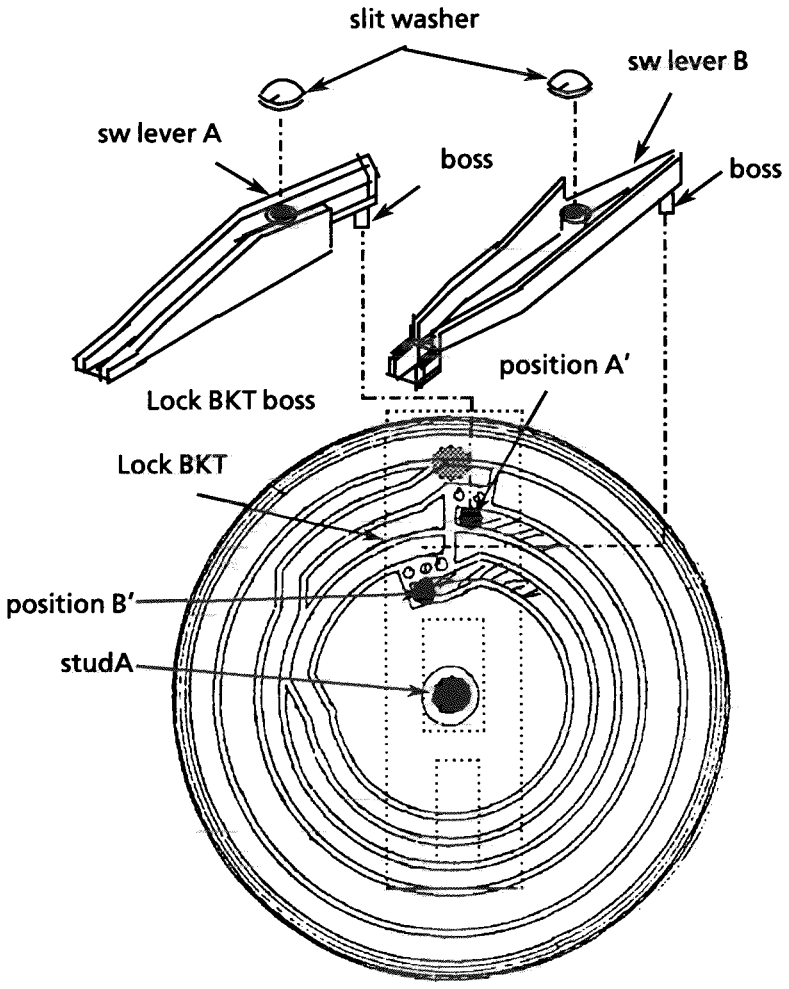


Fig 12. Main gere View

(12) Asembling the arm ass'y

1. Rotate the main gear so that stop position shown in Fig 12 .
2. Install the circuit board so that the lever of the switches meet the groove of the switches levers(fig 13) . (You can see the levers and groves from the hole on the circuit board when installing.)
3. Install the tree screws.

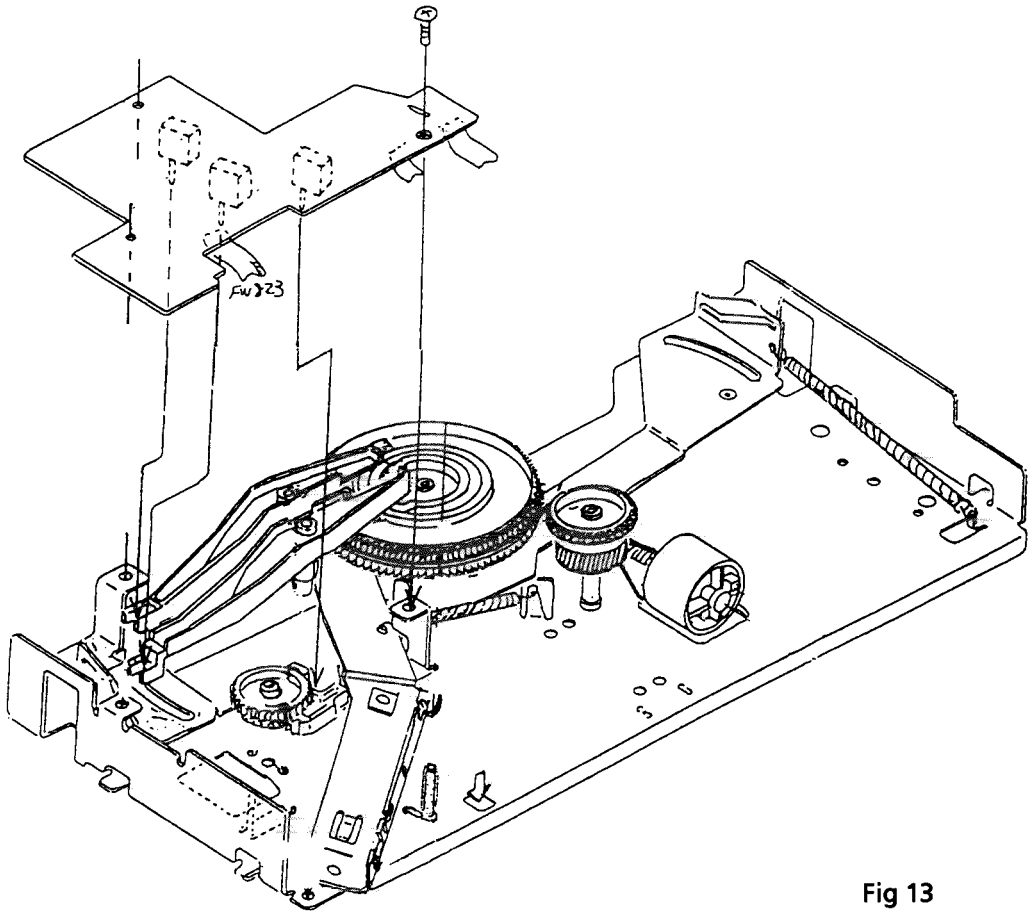


Fig 13

(13)Asembling the Drive gear

1. Rotate the gear B shown in Fig 8 and move the lodingmecha to the bottom side
2. Adjust the arm ass'y so that it engages with gear D as Fig-14.(Notice △ position)

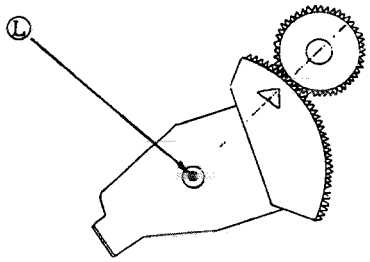


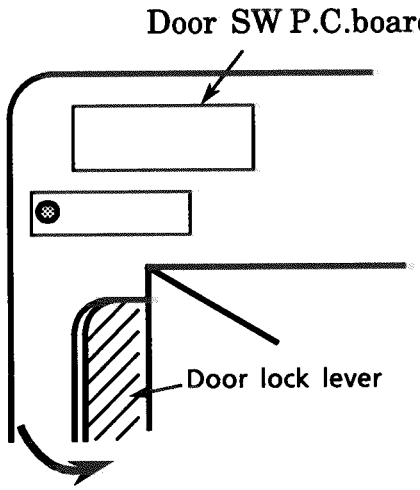
Fig 14

Ⓛ .. E75871-002

Adjustment Procedures

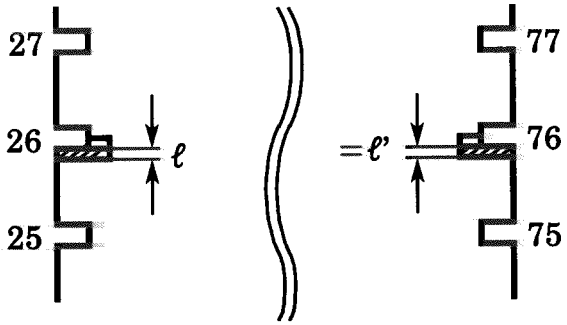
■ Comfirming a slant of the elevator

1) Remove the top cover and the rear panel of the mechanism unit.
2) Pull the lock lever in the direction of the arrow shown in Fig . to open the door.
3) Take the trays numbered 26 and 76 out.
4) Rotate the B gear , and move the elevator mechanism ass'y to the trays numbered 26 and 76.
5) Confirm that the elevator is not slant : ℓ is equals to ℓ' in Fig .2.
6) Loose the screws ② and ③.
7) Adjust the screw ① so that the elevator becomes horizontal .
8) Fix the screws ② and ③.



Rear View

Fig 1. Door lock lever View



Front View

Fig 2.Tray surit ass'y View

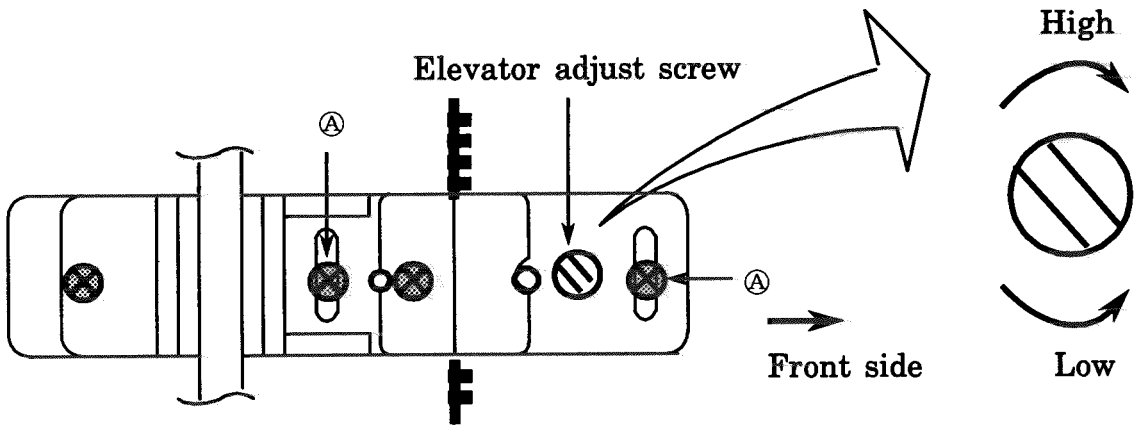


Fig 3. Elevator adjust screw View

■ High adjustment of the elevator

1) Remove the cover .
2) Connect the mains cord of the mechanism unit only with the outlet.
3) Open the door.
4) Take the disc trays 25.
5) Push the door SW using the like to turn the switch on shown fig 4 .
6) Push the switch S842 on the circuit board (ENN-439-1)at the rear side of the mechanism.
7) The elevator goes up and down as follows .

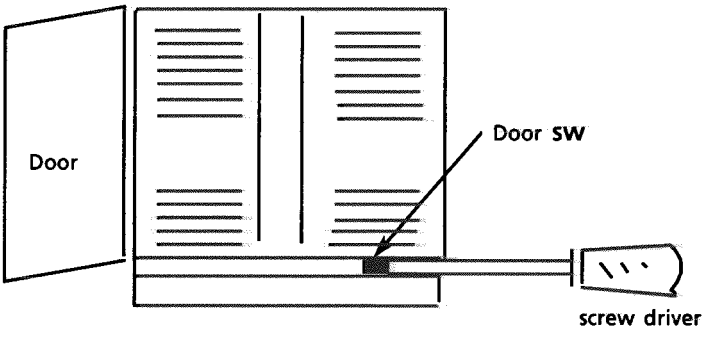
Reset position (R) → disc tray **25** → (R)

- The unit does not a disc . (The elevator stands by at the rest position during constant time.)
- The mech. stops at the position after setting door switch OFF when the tray is on No.25 rail.

8) Comfirm if the elevator rail is at the height of the tray rail of disc 25 .
   - Adjustment
9) Turn the elevator adjust screw to adjust the height of the elevator rail.

   (Note) Since the pitch of the screw is 0.4mm,a turn of the screw makes a change of 0.4mm.
10) Set the door switch ON again,and repeat the procedure(7)~(9) so that the position of the rail in the elevator can be the same as the one for the tray installing shelf.
11) Bond the screw "BOND" #1401C used.

- The mech. moves to No.25 disc tray to return the tray when S842 is pressed after setting the door switch ON. And, it moves to No.49 disc tray and returned to mech. reset position (R),then the check mode is released.



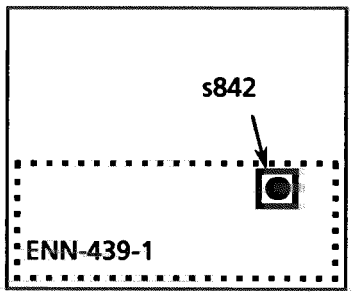


Fig 4. Door sw test sw View

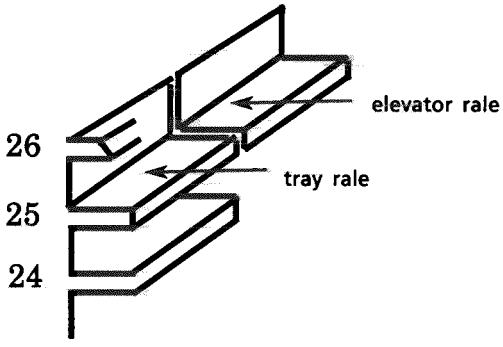


Fig 5. tray rale and elevatorrale View

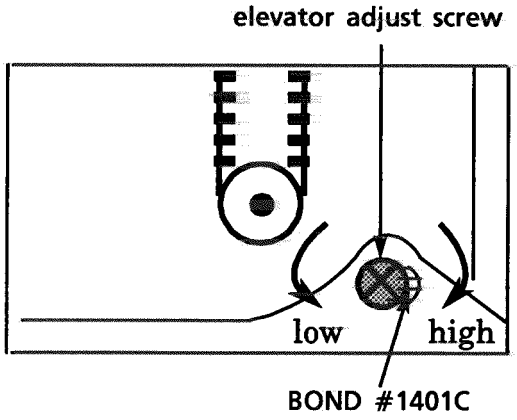
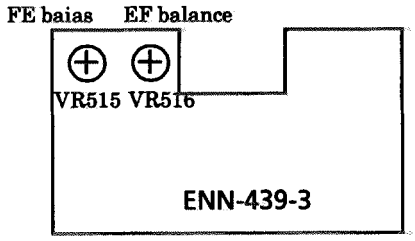


Fig 6.Top View

■ CD adjustment

(1) Adjustment measure
Oscilloscope , Test disc (CRG-1117)



(2) Procedures

1) FE baias

① Connect a oscilloscope between TP6(FE) and TP3(GND) .
② Adjust R515 so that the DC voltage at TP5 becomes 0±0.01V.

2) EF balance

① Connect a oscilloscope between TP4(TE) and TP3(GND) and play the test disc.
② Adjust R516 so that the center voltage of the waveform becomes 0±0.05V.

3) Gain adjustment

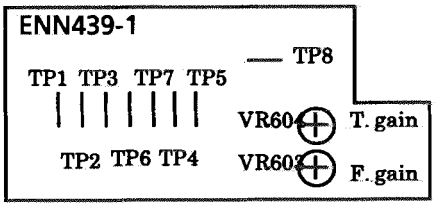
If the gain is out of adjustment, the symptoms below will appear.
As described above, the focus and tracking gain adjustment are performed to satisfy mutually contradictory characteristics.
A simplified adjustment procedure is described below. However, since exact adjustment can not be performed prior to adjustments, note(or mark) the positions of the semi-fixed resistors.
If the positions after the adjustment are only different, return the VRs to their original position.

Focus gain adjustment

1. Connect an oscilloscope to TP 6(FE) and TP 3(GND).
2. Load a disc and press the PLAY button.
3. Adjust VR603 (F.GAIN ADJ.) so that the waveform becomes below figure 1.

Tracking gain adjustment

1. Connect an oscilloscope to TP 4(TEIN) and TP 3(GND).
2. Load the test disc and press the PLAY button.
3. Adjust VR604 (T.GAIN ADJ.) so that the waveform becomes below figure 2.



TP1	TEST	TP7	FEIN
TP2	RF	TP4	TE
TP3	GND	TP5	TEIN
TP6	FE	TP8	XCX

●Gain too low
Focus gain : Focus is not obtained and disc does not rotate.
Tracking gain : Mechanical shock occurs easily and sound is interrupted. Or time counter display stop counting .

●Gain too high
Focus gain : Scratches (on the disc) easily interrupt play, and noise is increased during play.
Tracking gain : Since the follow-up ability of the pickup is too high, the pickup may oscillate and oscillating sound may output.

Focus Gain Adjustment

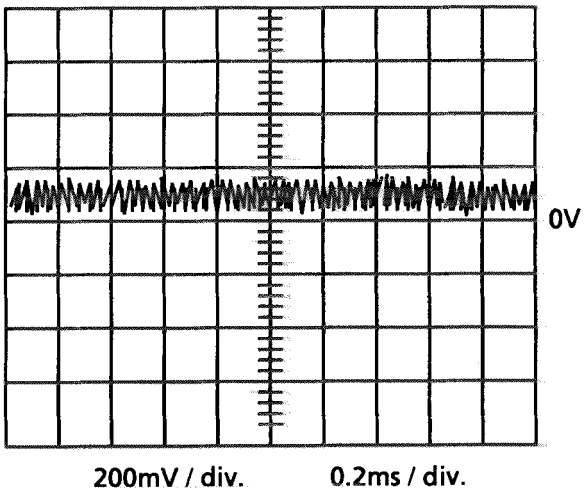


Figure 1

Tracking Gain Adjustment

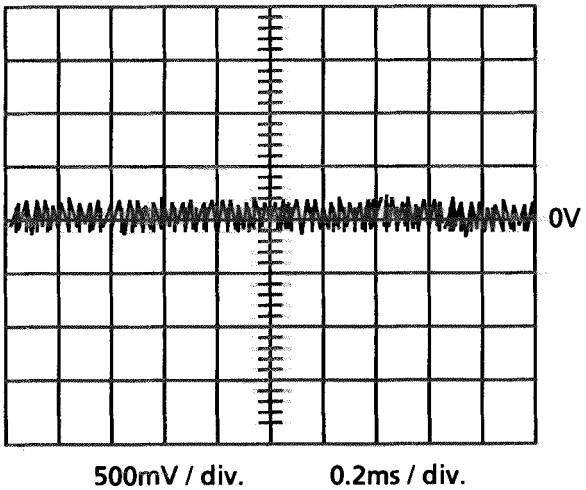
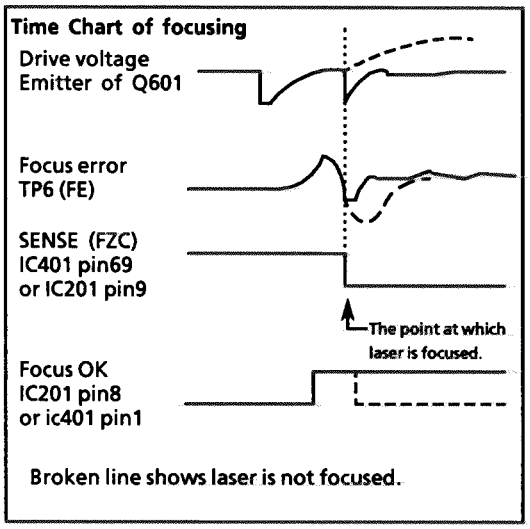
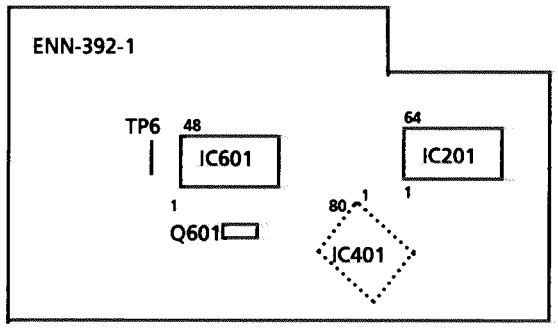


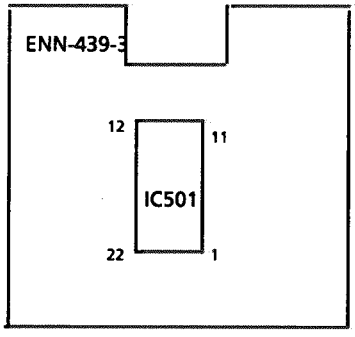
Figure 2

Flow of Functional Operation Until TOC is Read

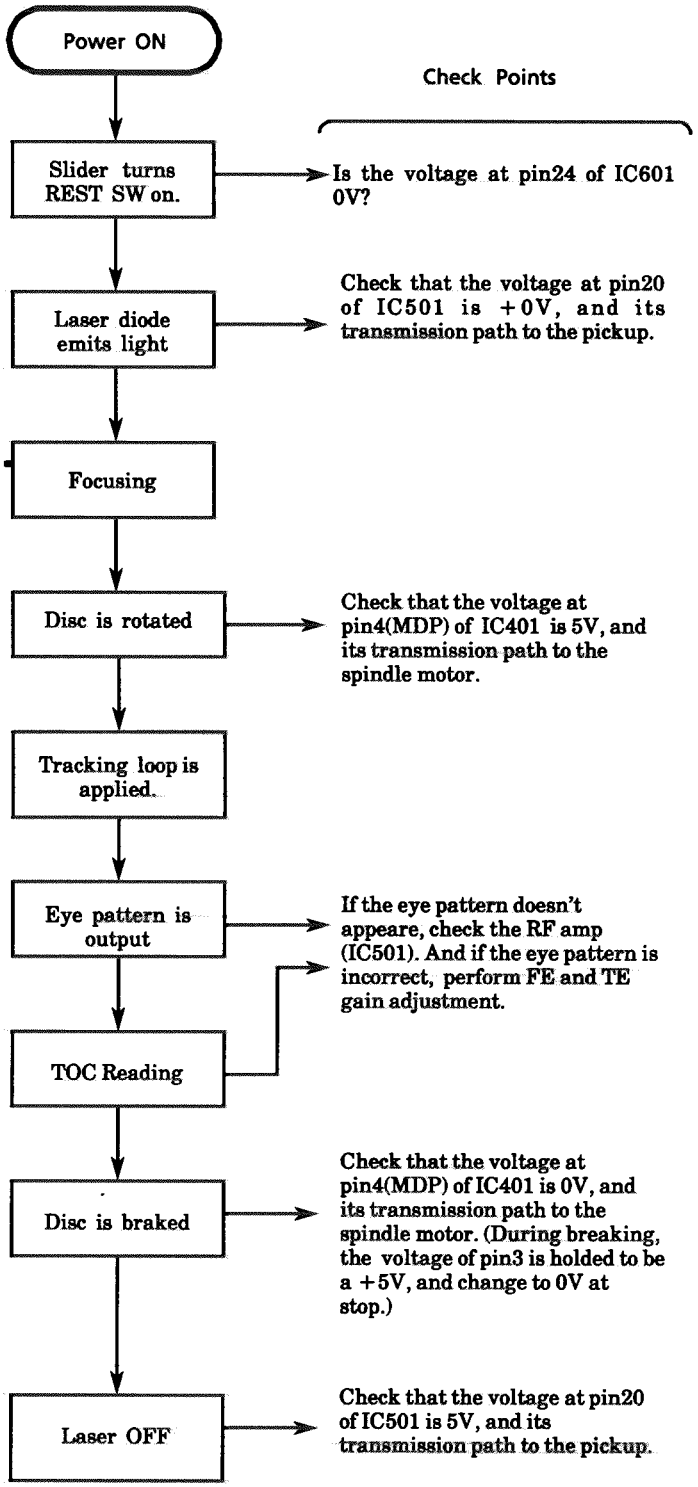




Rear



Bottom

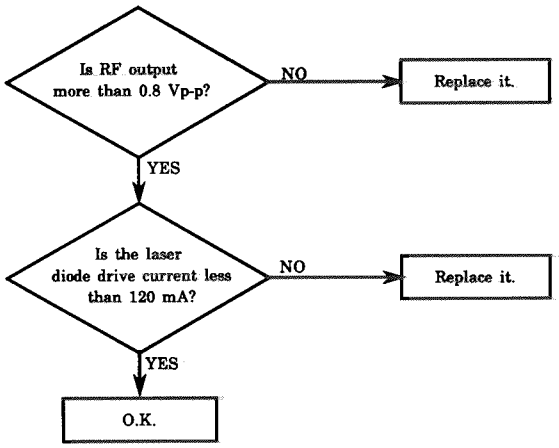

Power ON
Check Points
Slider turns REST SW on.
Is the voltage at pin24 of IC601 0V?
Laser diode emits light
Check that the voltage at pin20 of IC501 is +0V, and its transmission path to the pickup.
Focusing
Disc is rotated
Check that the voltage at pin4(MDP) of IC401 is 5V, and its transmission path to the spindle motor.
Tracking loop is applied.
Eye pattern is output
If the eye pattern doesn't appeare, check the RF amp (IC501). And if the eye pattern is incorrect, perform FE and TE gain adjustment.
TOC Reading
Disc is braked
Check that the voltage at pin4(MDP) of IC401 is 0V, and its transmission path to the spindle motor. (During breaking, the voltage of pin3 is holded to be a +5V, and change to 0V at stop.)
Laser OFF
Check that the voltage at pin20 of IC501 is 5V, and its transmission path to the pickup.

Maintenance of Laser Pickup

(1) Life of the laser diode

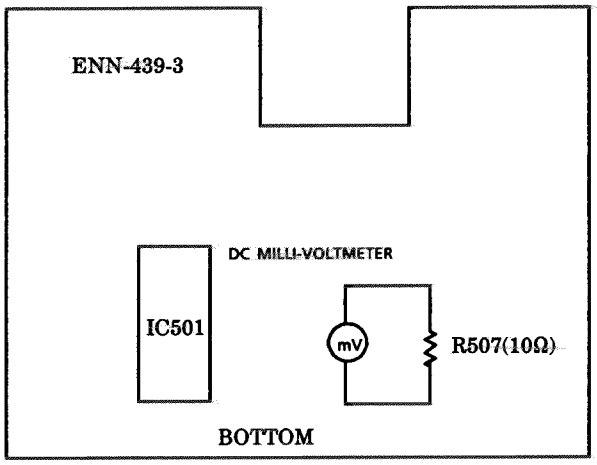
When the life of the laser diode has expired, the following symptoms will appear.

1. The level of RF output (EFM output: amplitude of eye pattern) will be low.
2. The drive current required by the laser diode will be increased.
   In such a case, check the life of the laser diode by the flowchart below



(2) Measurement of laser diode drive current

Measure the voltage across the resistor R507 by using a milli-voltmeter. When the voltage is more than 1.2V, it shows that the life of the laser diode has expired.



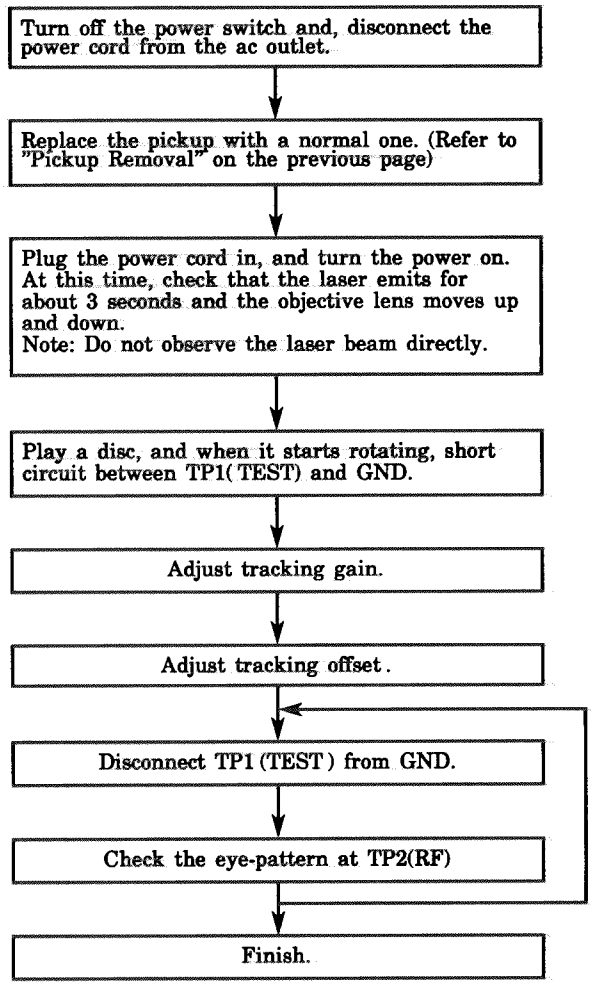
(3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup


Turn off the power switch and, disconnect the power cord from the ac outlet.
Replace the pickup with a normal one. (Refer to "Pickup Removal" on the previous page)
Plug the power cord in, and turn the power on. At this time, check that the laser emits for about 3 seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.
Play a disc, and when it starts rotating, short circuit between TP1(TEST) and GND.
Adjust tracking gain.
Adjust tracking offset.
Disconnect TP1 (TEST) from GND.
Check the eye-pattern at TP2(RF)
Finish.

Note: Since one adjustment may affect other settings, repeat these adjustments a few times.

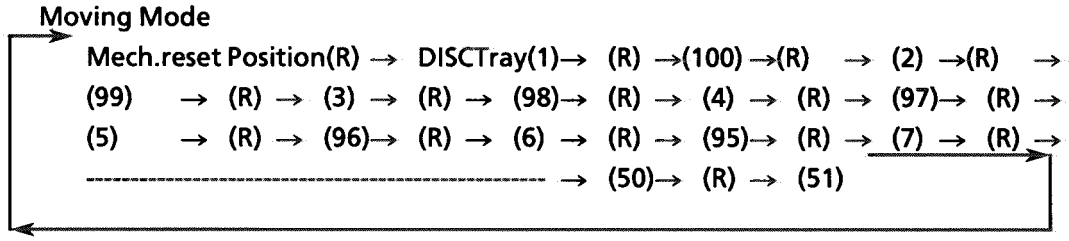
■ MECHANISM CHECK MODE

XL-MC301M itself can set the following check mode without connecting the controller(XL-MC301C).

1. Loading mode (aging mode) for all disc trays.

   Open the door (Door SW OFF) and press S842*.

   * S842 is installed on ENN-392-1 which locates near the rear side.

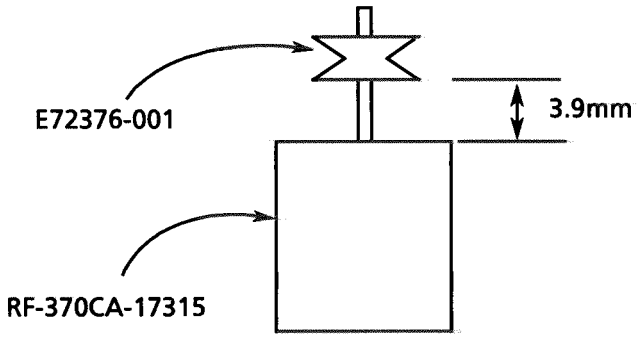


- Initial condition
  1) The tray is returned to its original position when it is being loaded.
  2) Except that, JAB is operated without moving the elevator.

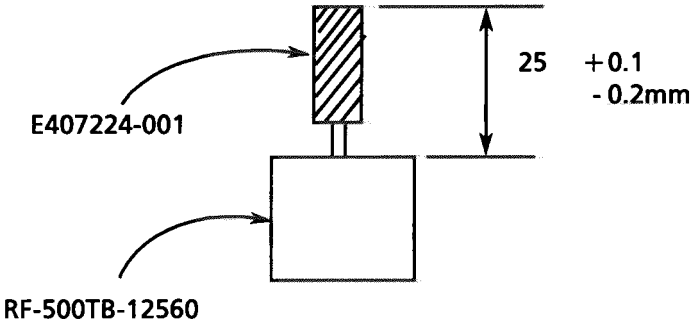
- Unit does not play a disc.
- The function is continued even if the door is closed while the aging mode is ON
- Pressing S842 again makes the mode release.

■ Motor pully height

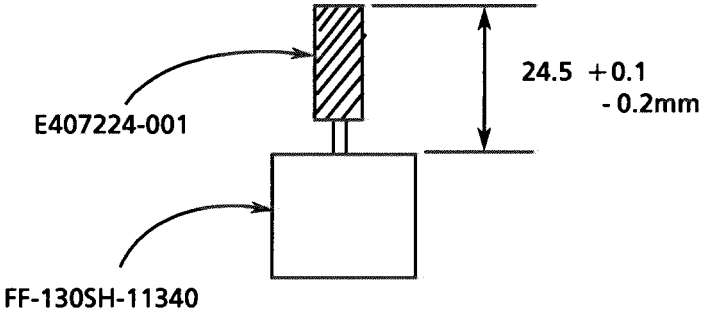
Elevator up/down motor(M1)



Tray stopper open/close & traverse moving motor(M2,M4)



Tray loding motor(M1)



■ Causes for mechanism malfunctions

1) The shutter does not open.
   Cause ① The tray touches the shutter.
   ② The link for driving the shutter is bended.
   (The link is good if it returns automatically by the when you move the link after removing the rack.)
   ③ Jamming worm gear.
   ④ Connections of S805 and M2 are bad.(Wire ,solder,connector,parts etc.)
   ⑤ Pins of the shutter do not meet the cams of the link and side panel.

2) The traverse mechanism does not move right and left .
   Cause ① The elevator assembly interferes with the traverse's move.
   ② The pickup base is not installed correcty.
   ③ The flut wire FW101 interferes with the pickup base.
   ④ SW LEVER (D)and (P),and Lock bracket are not installed to the main gear correctly.
   ⑤ Connections of S808 and M4 are bad.
   ⑥ The pickup base does not gear into the main gear because of the guide shaft for the pickup base bended.

3) The door does not open.
   Cause ① The main gear does not tune normally.
   ② The link is not installed in the main gear correctly.

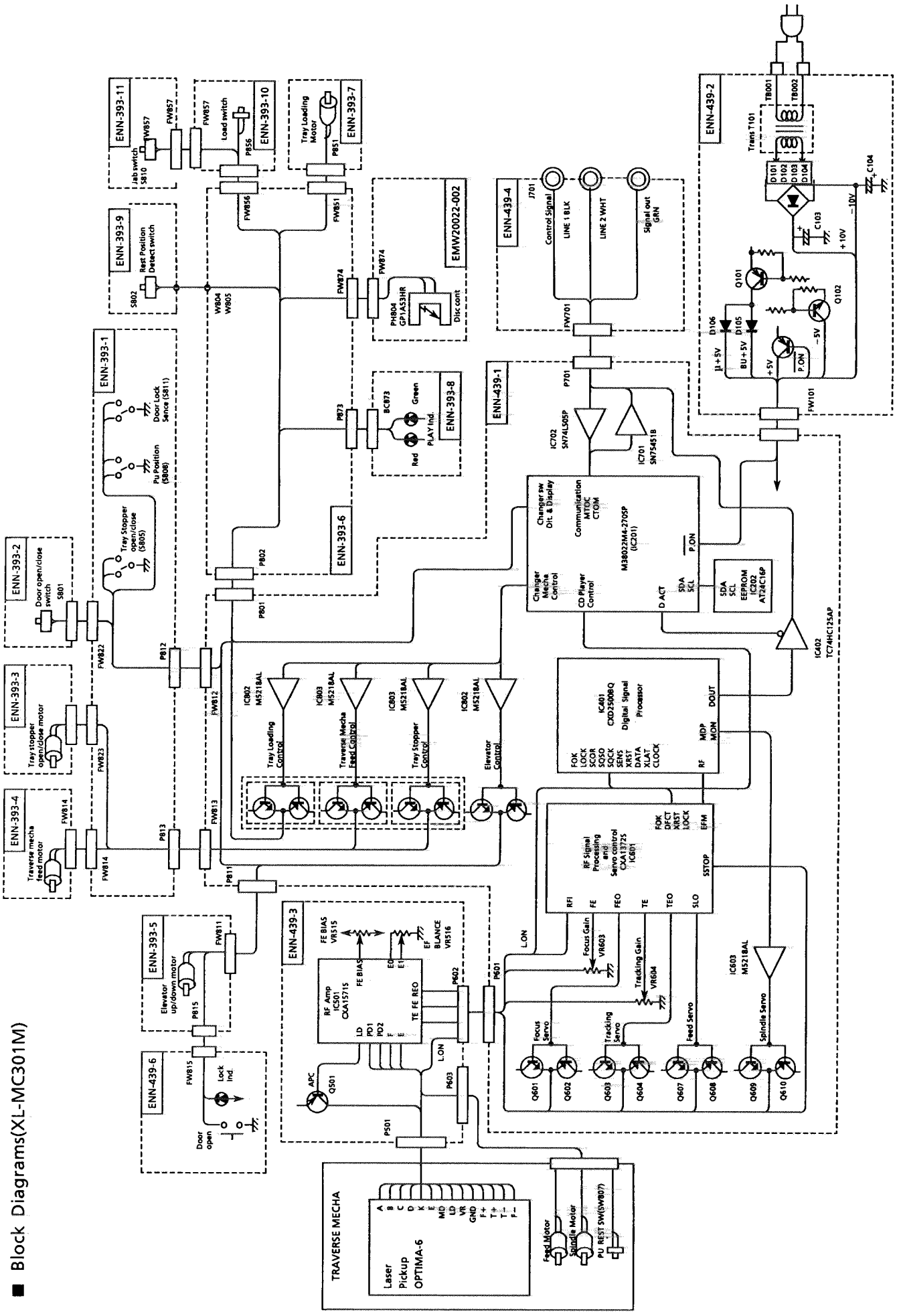
   The door can be opened by opening the door lock base on the right side of the front panel ,or pushing the circuit board with S801 using a screw drinor through the hole on the front of the bottom cover,when the traverse mechanism is in the right of the machine in the front view.When the elevator is in the left ,mone the elevator right after removing the metal cover ,rear panel and CD circuit board. So the door can be opened with the method mentioned above.

4) The elevator close not go up and down.
   Cause ① Transport lock is not released.
   ② The tray loading hook touches a tray.
   ③ A tray interferes with the elevator's move .
   ④ The elevators LEDand braket touches the center panel.
   ⑤ The wiring for the motor M1 is in correct.

5) The elevator does not stop at the right position.
   Cause ① PH804 is bad.
   ② The wire between P801 and P802 is broken.
   ③ Friction between the shaft and guide.
   ④ The springs on the right side of the elevator are off.
   ⑤ Deterioration of the gear for the elevator up and down .
   ⑥ The elevator is slant.
   ⑦ The height adjustment is missed.

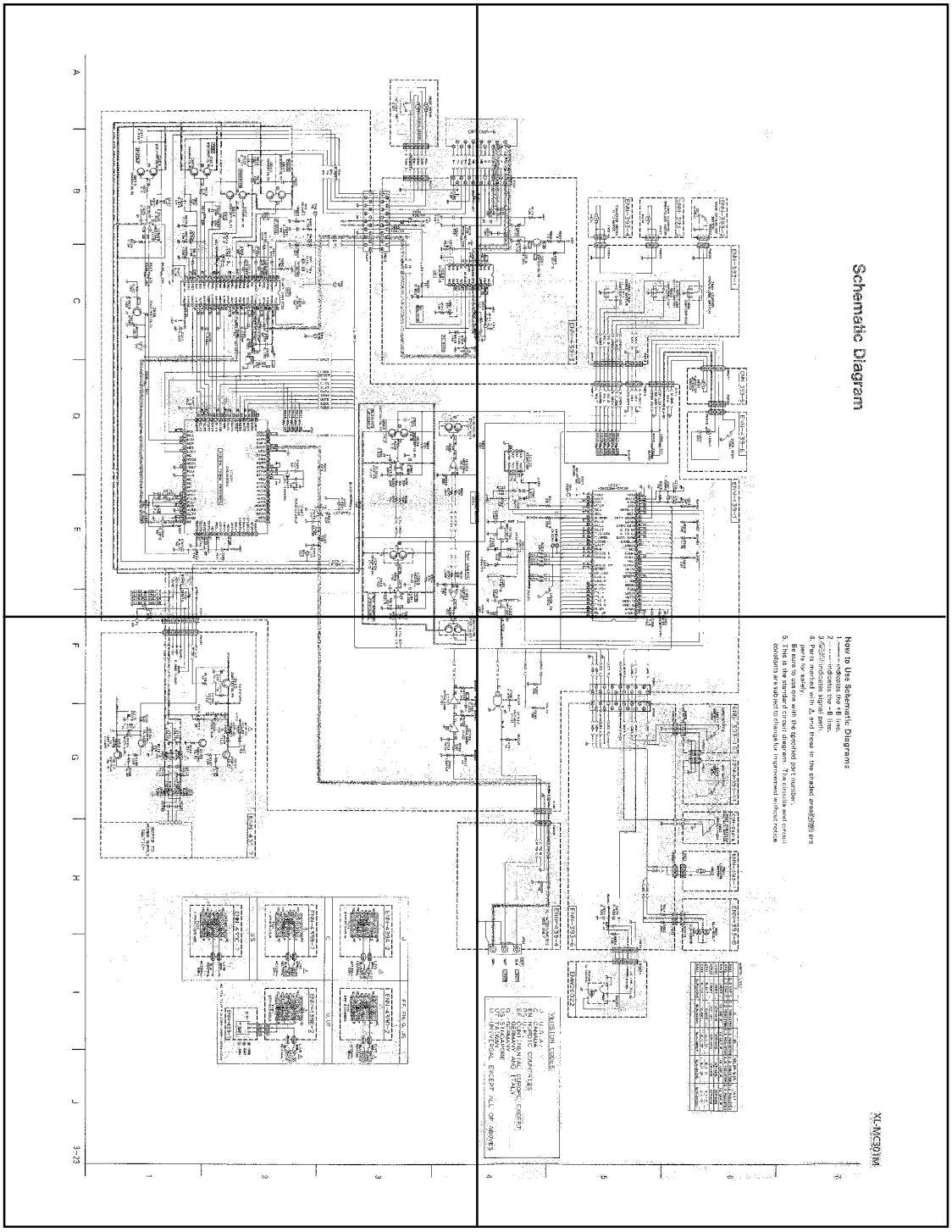
6) Tray can not be loaded.
   Cause ① The elevator is slant.
   ② The elevator is not at the right position.
   ③ Loading belt is jammed.
   ④ The elevator is not flat for the loading hook.
   ⑤ The timming belt and hook are off.

■ Block Diagrams(XL-MC301M)



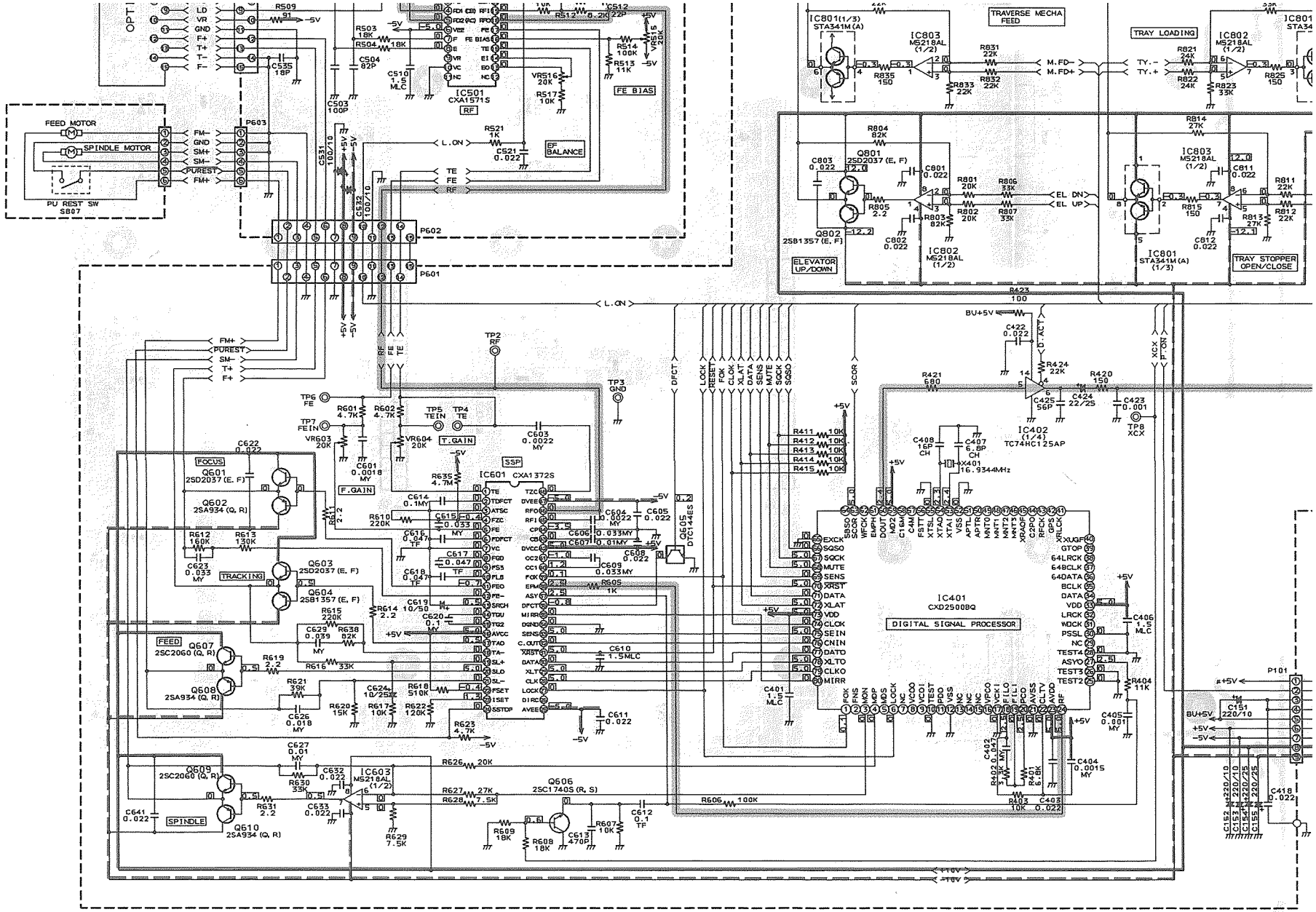
P3-23-a

P3-23-b



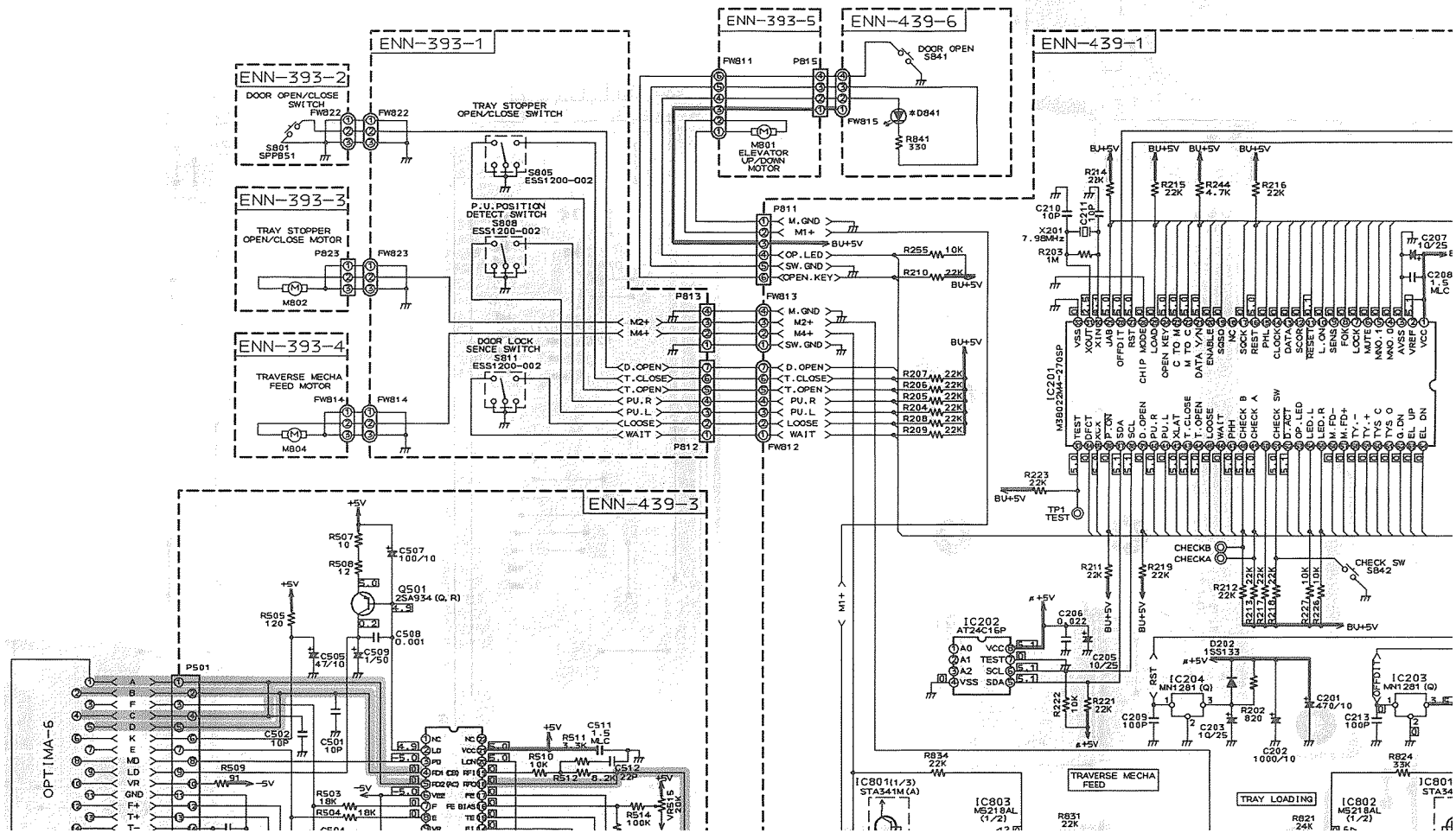
P3-23-c

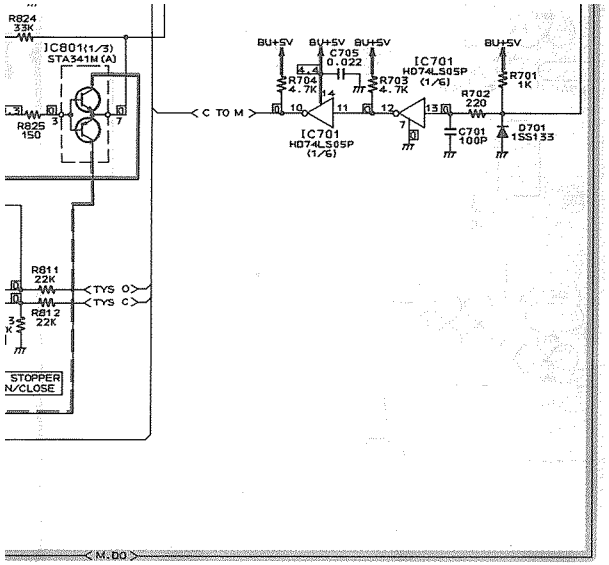
P3-23-d

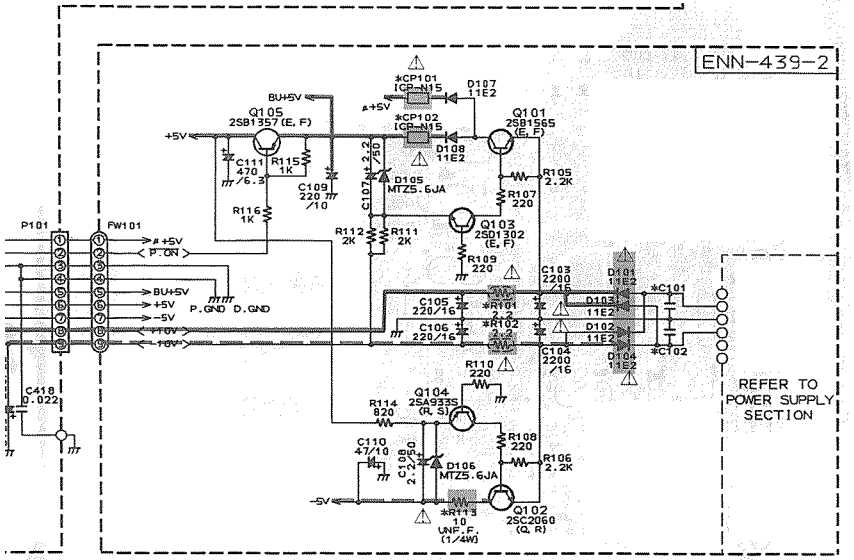

OPTI
LD
VR
GND
F+
T+
T-
F-
FEED MOTOR
SPINDLE MOTOR
PU REST SW
S807
P603
P602
P601
IC501
CXA1571S
RF
FE BIAS
FE BALANCE
L.ON
TE
FE
RF
IC801(1/3)
STA341M(A)
TRAVERSE MECHA FEED
M.FD-
M.FD+
TRAY LOADING
TY.-
TY.+
IC803
M5218AL
(1/2)
IC802
M5218AL
(1/2)
Q801
2SD2037 (E, F)
Q802
2SB1357 (E, F)
ELEVATOR UP/DOWN
EL DN
EL UP
TRAY STOPPER OPEN/CLOSE
IC801
STA341M(A)
(1/3)
FM+
PUREST
SM-
T+
F+
TP2
RF
TP3
GND
TP6
FE
TP7
FEIN
TP5
TEIN
TP4
TE
T.GAIN
F.GAIN
SSP
IC601
CXA1372S
FOCUS
Q601
2SD2037 (E, F)
Q602
2SA934 (Q, R)
TRACKING
Q603
2SD2037 (E, F)
Q604
2SB1357 (E, F)
FEED
Q607
2SC2060 (Q, R)
Q608
2SA934 (Q, R)
SPINDLE
Q609
2SC2060 (Q, R)
Q610
2SA934 (Q, R)
IC603
M5218AL
(1/2)
Q606
2SC1740S (R, S)
Q605
DTC144ES
DFCT
LOCK
RESET
FOK
CLOK
XLAT
DATA
SENS
MUTE
SCK
SQSO
SCOR
XCX
P.ON
D.ACT
BU+5V
IC402
(1/4)
TC74HC125AP
X401
16.9344MHz
IC401
CXD2500BQ
DIGITAL SIGNAL PROCESSOR
P101
A
B
C
D
E

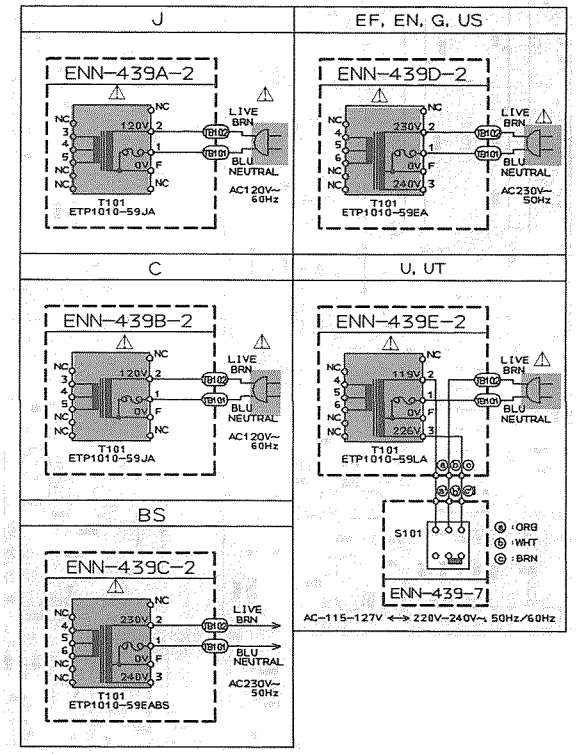
P3-23-a

Schematic Diagram









F G H I J

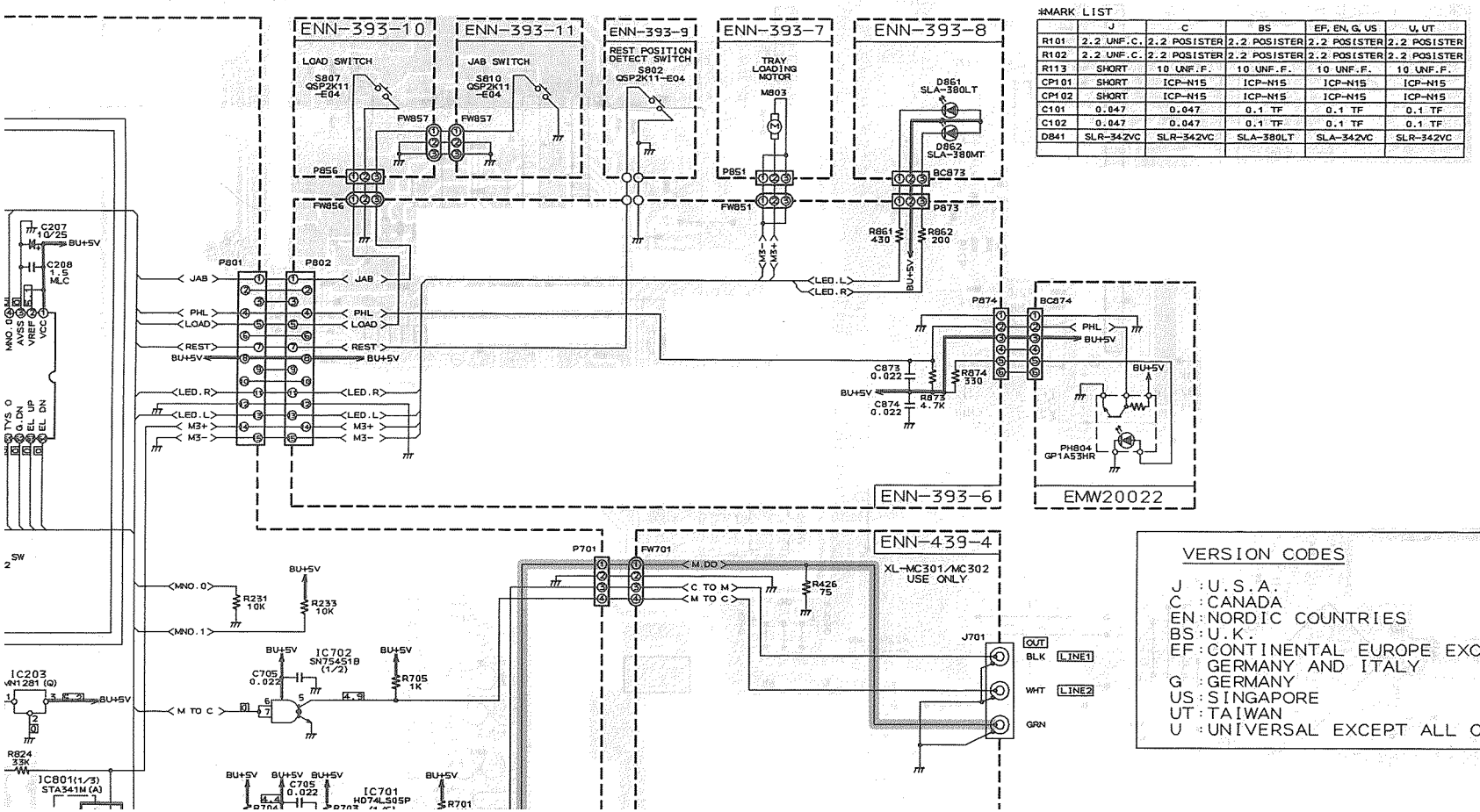
3 2 1

3-23

P3-23-c

How to Use Schematic Diagrams

1. ——— indicates the +B line.
2. — — — indicates the −B line.
3. ▒▒▒ indicates signal path.
4. Parts marked with ⚠ and those in the shaded area ▒▒▒ are parts for safety.
   Be sure to use one with the specified part number.
5. This is the standard circuit diagram. The circuits and circuit constants are subject to change for improvement without notice.

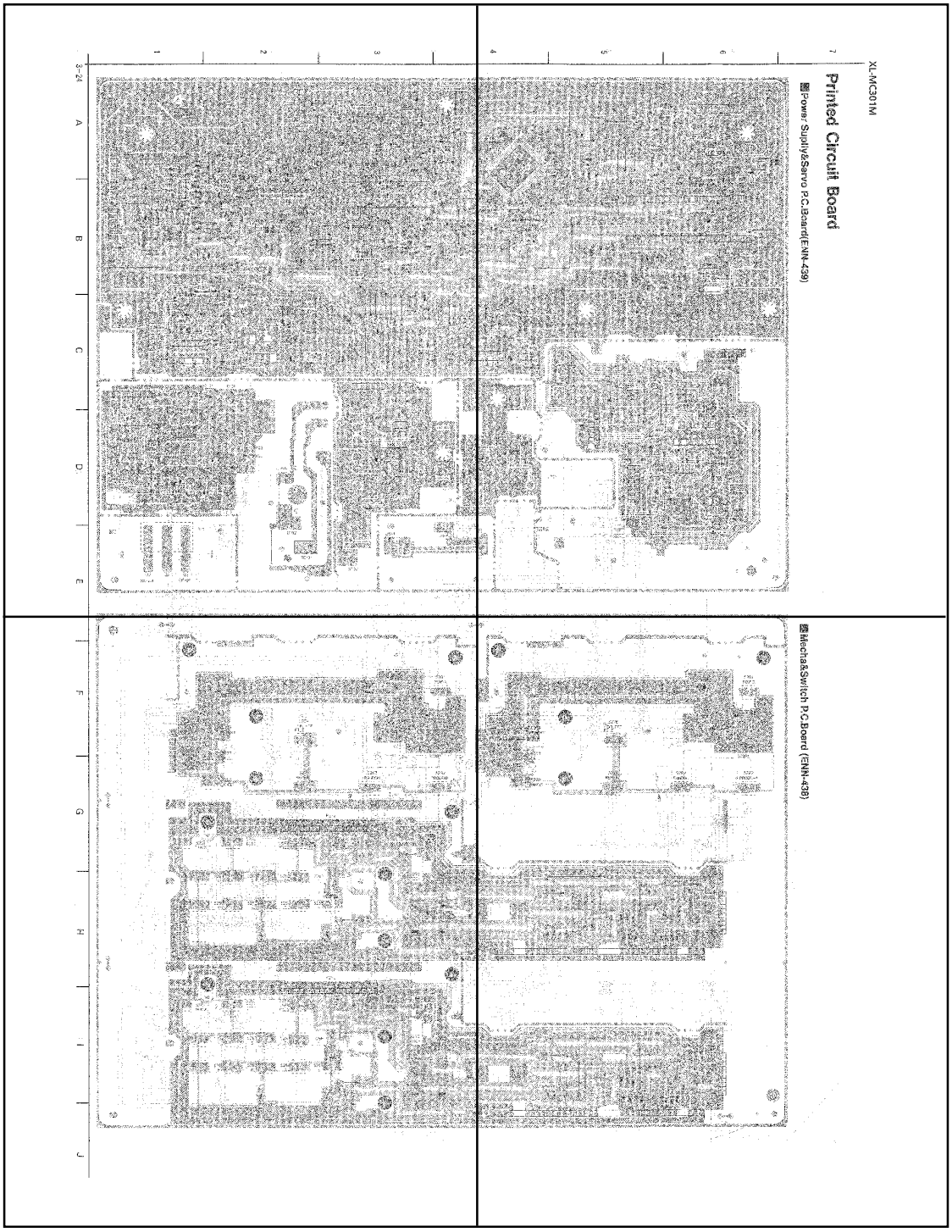


*MARK LIST

	J	C	BS	EF, EN, G, US	U, UT
R101	2.2 UNF.C.	2.2 POSISTER	2.2 POSISTER	2.2 POSISTER	2.2 POSISTER
R102	2.2 UNF.C.	2.2 POSISTER	2.2 POSISTER	2.2 POSISTER	2.2 POSISTER
R113	SHORT	10 UNF.F.	10 UNF.F.	10 UNF.F.	10 UNF.F.
CP101	SHORT	ICP-N15	ICP-N15	ICP-N15	ICP-N15
CP102	SHORT	ICP-N15	ICP-N15	ICP-N15	ICP-N15
C101	0.047	0.047	0.1 TF	0.1 TF	0.1 TF
C102	0.047	0.047	0.1 TF	0.1 TF	0.1 TF
D841	SLR-342VC	SLR-342VC	SLA-380LT	SLA-342VC	SLR-342VC

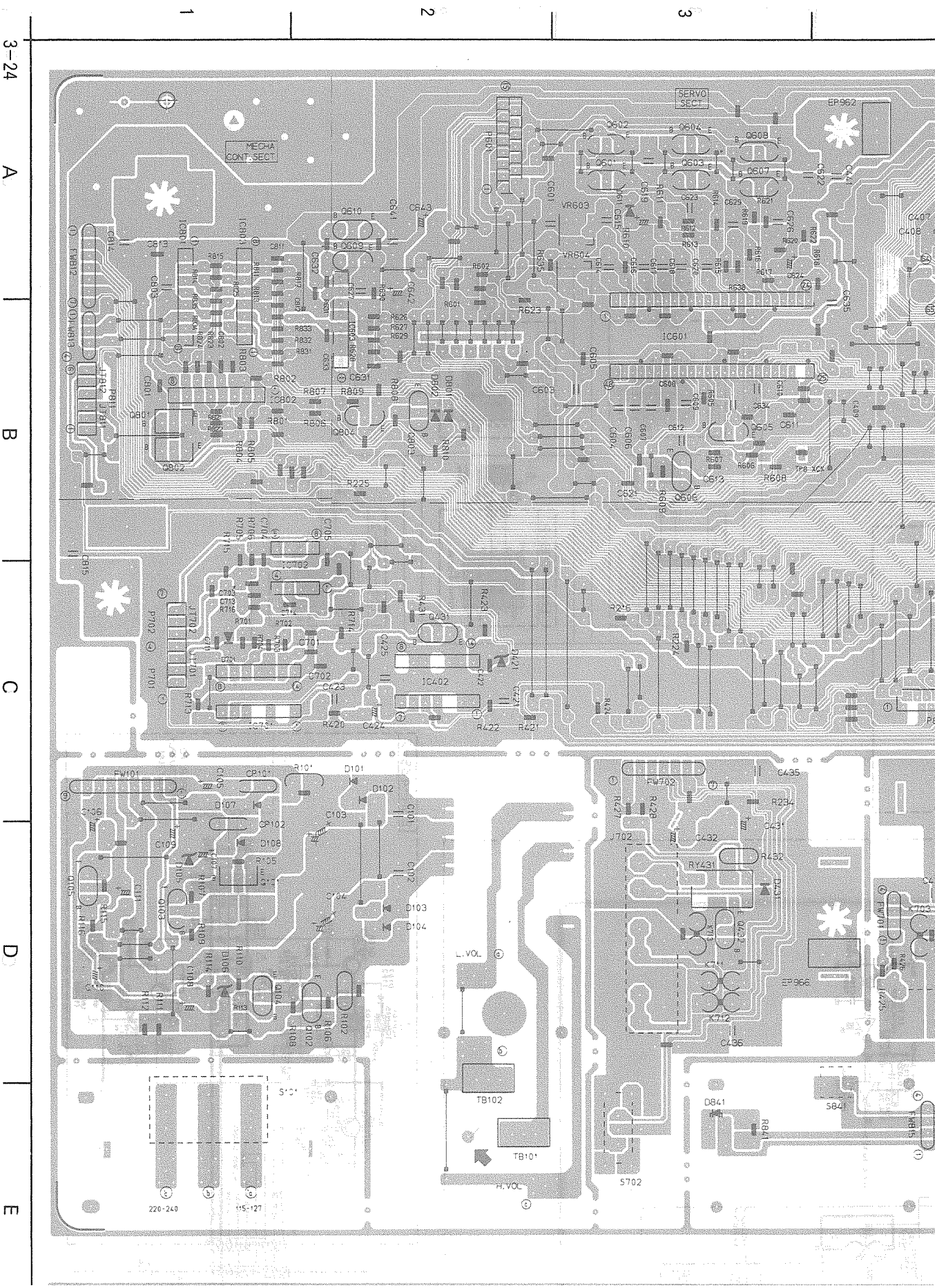
P3-24-a

P3-24-b



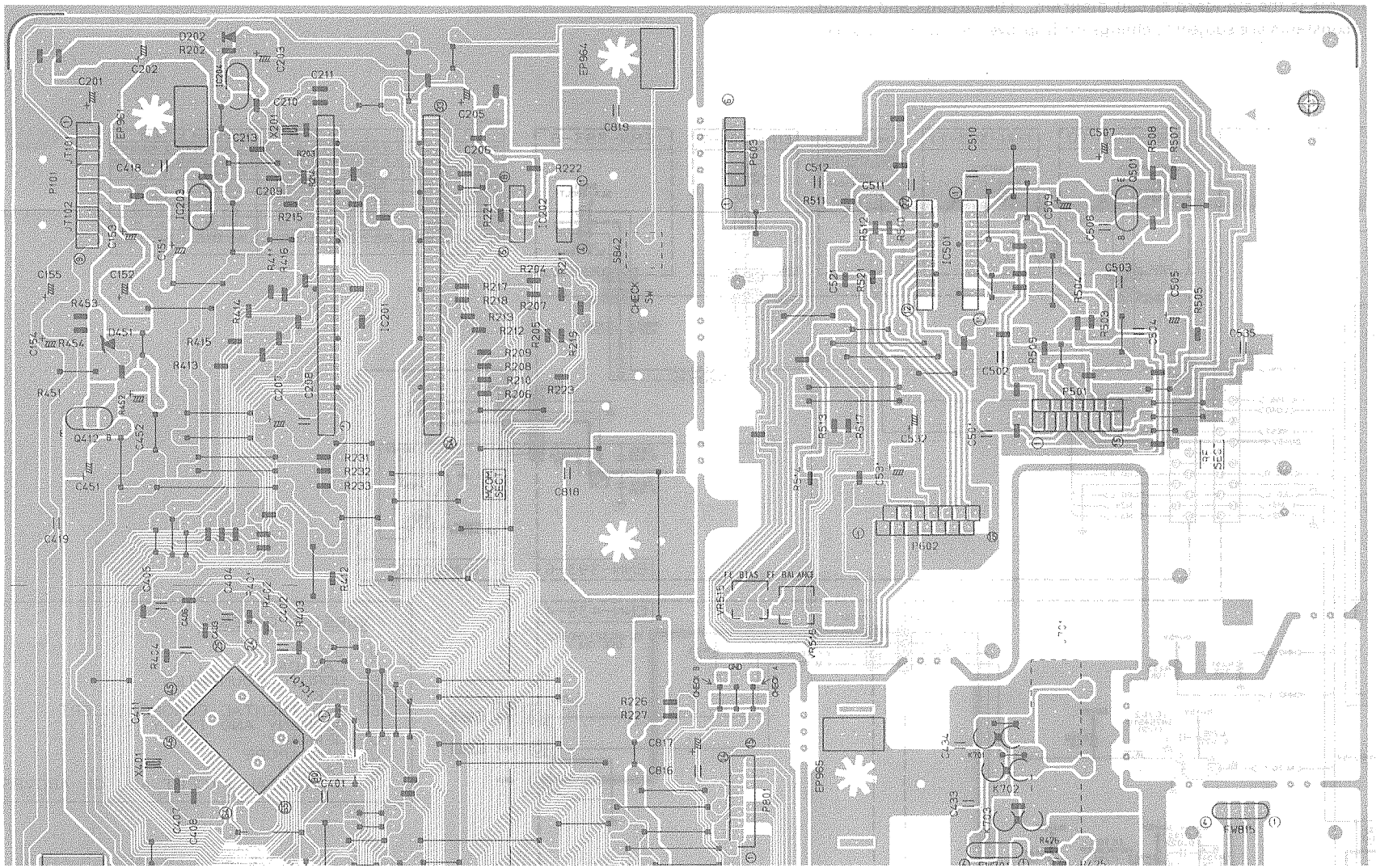
P3-24-c

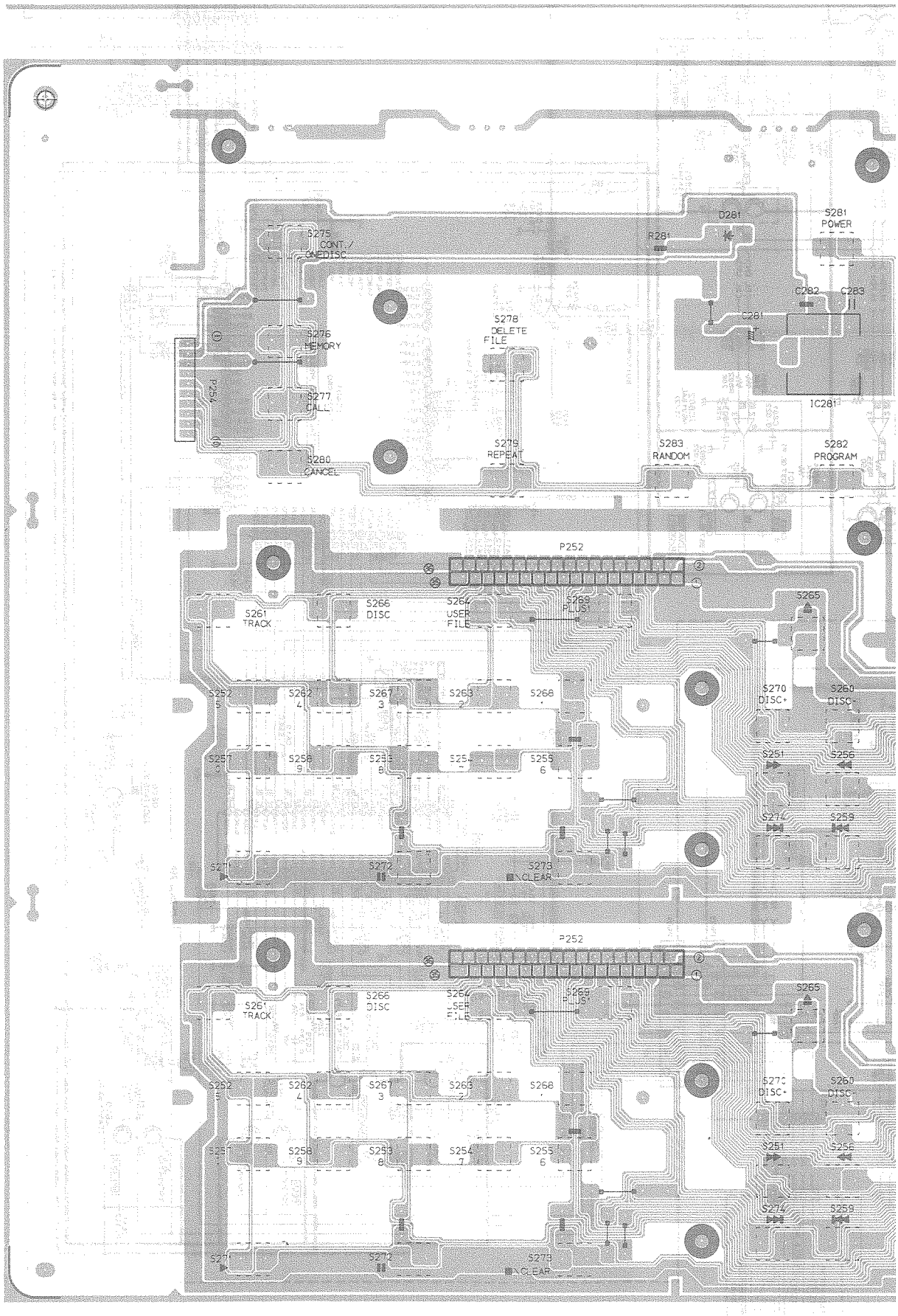
P3-24-d


1
2
3
A
B
C
D
E
3-24
MECHA CONT. SECT
SERVO SECT
IC601
IC402
IC702
IC703
TB102
TB101
L.VOL
H.VOL
S101
S702
220-240
115-127

Printed Circuit Board

■Power Suplly&Servo P.C.Board(ENN-439)




S275
CONT./
CD-EDISC
S276
MEMORY
S277
CALL
S278
DELETE
FILE
S279
REPEAT
S280
CANCEL
D281
R281
S281
POWER
C282
C283
C281
IC281
S283
RANDOM
S282
PROGRAM
P252
S261
TRACK
S266
DISC
S264
USER
FILE
S269
PLUS1
S265
S270
DISC+
S260
DISC-
S251
S256
S274
S259
S272
S273
CLEAR
P252
S261
TRACK
S266
DISC
S264
USER
FILE
S269
PLUS1
S265
S270
DISC+
S260
DISC-
S251
S256
S274
S259
S272
S273
CLEAR

F G H I J

Mecha&Switch P.C.Board (ENN-438)

XL-MC301C

<Parts List>

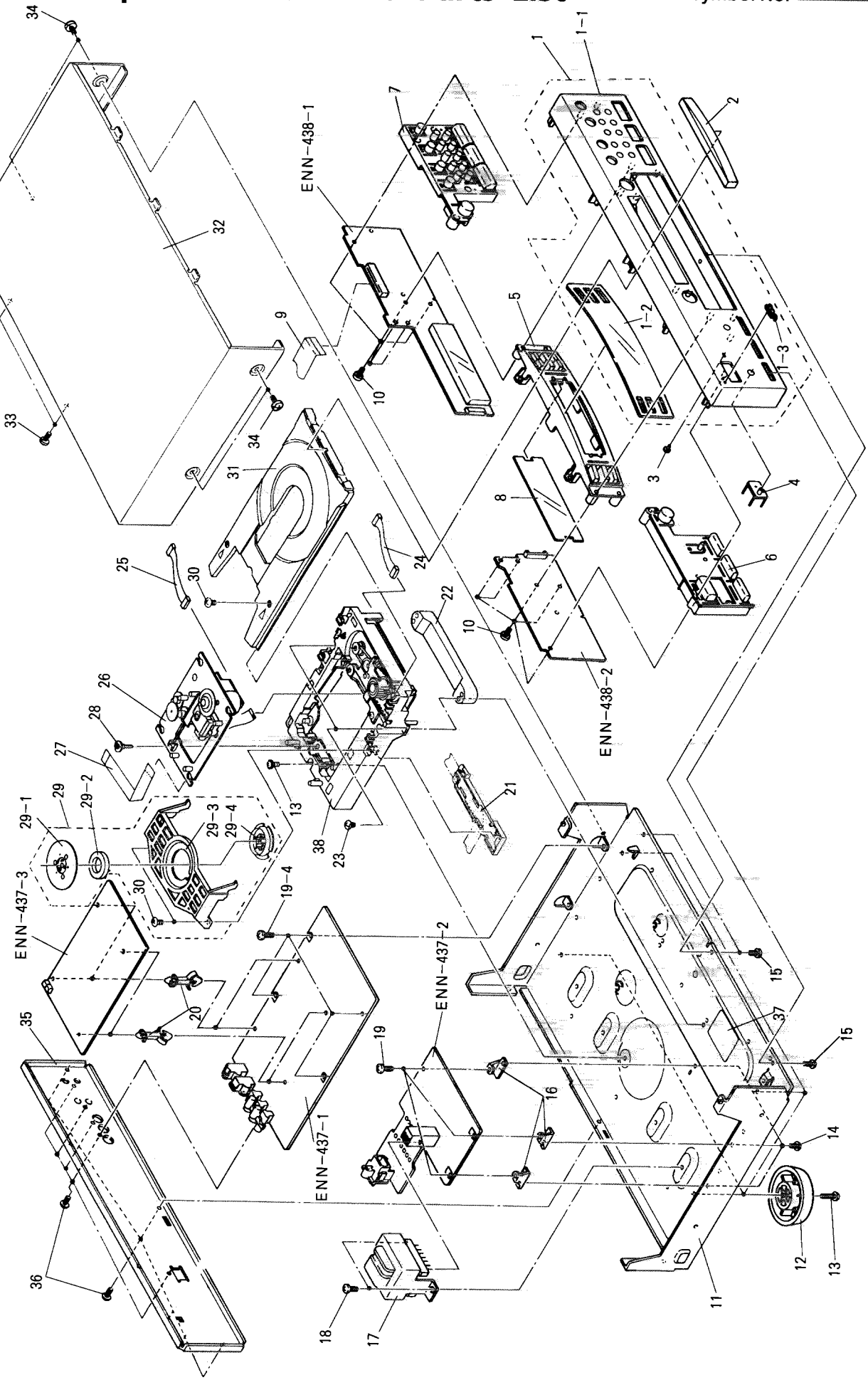
Note : All printed circuit boards and its assemblies are not available as service parts.

Contents

General Exploded View and Parts List 4-2
CD Mechanism Ass'y and Parts List 4-4
Loading Mechanism Ass'y and Parts List 4-5
■ Grease Point 4-5
Printed Circuit Board Ass'y and Parts List 4-7
■ ENN-437 ☐ Main PC Board Ass'y 4-7
■ ENN-438 [A] Front PC Board Ass'y 4-11

General Exploded View and Parts List

Symbol No. M 1 M M



Parts List

Symbol No. M 1 M M

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	EFP-XLMC301CJ(S	FRONT PANEL ASSY	1		
	1-1	E103015-003ST	FRONT PANEL	1		
	1-2	E309369-001	WINDOW SCREEN	1		
	1-3	VJD5429-001	JVC MARK	1		
	2	E309367-001	CD FITTING	1		
	3	FSJD4001-002	INDICATOR	1		
	4	E308744-002	REMOTE LENS	1		
	5	E208510-003ST	SCREEN BASE	1		
	6	E208499-001ST	PUSH BUTTON	1	(L)	
	7	E208501-001ST	PUSH BUTTON	1	(R)	
	8	E309371-001	FL SCREEN	1		
	9	VWF1236-14TTBW	FFC CABLE	1		
	10	SDSF2608Z	SCREW	10		
	11	E102355-003SS	CHASSIS BASE	1		
	12	FSYH4001-00D	FOOT ASSY	4		
	13	SBST3008Z	TAPPING SCREW	5		
	14	SBSG3006Z	TAPPING SCREW	3		
	15	SDSF3008M	SCREW	3		
	16	E68587-004	BRACKET	3		
	17	ETP1010-58CA	POWER TRANSFORMER	1		C
		ETP1010-58JA	POWER TRANSFORMER	1		J
	18	E65389-002	SPECIAL SCREW	2		
	19	SBSG3008Z	TAPPING SCREW	7		
	20	E306232-003	FASTENER	4		
	21	E308181-221SS	FFC HOLDER	1		
	22	E307158-003SS	STAND	1		
	23	SBST3025Z	TAPPING SCREW	2		
	24	EWS265-B408	SOCKET WIRE ASSY	1		
	25	EWS266-B410	SOCKET WIRE ASSY	1		
	26	----------	CD MECHANISM ASSY	1	See page 4-4	
	27	EWPZ02-001	FFC CABLE	1		
	28	E406293-002	SPECIAL SCREW	1		
	29	E306837-005	CLAMPER BASE ASSY	1		
	29-1	E306836-003	YOKE PLATE	1		
	29-2	E74897-002	MAGNET	1		
	29-3	E26756-002	CLAMPER BASE	1		
	29-4	E306835-001	CD CLAMPER	1		
	30	SBSF3008M	TAPPING SCREW	3		
	31	E102358-331SS	CD TRAY	1		
	32	E206906-001	METAL COVER	1		
	33	SDSG3008M	TAPPING SCREW	2		
	34	E406308-001	SPECIAL SCREW	4		
	35	E208505-006	REAR PANEL	1		C
		E208505-005	REAR PANEL	1		J
	36	E73273-006	SPECIAL SCREW	8		
	37	E406507-001	CAUTION LABEL	1		C
	38	----------	LOADING MECHANISM ASSY	1	See page 4-5	C
	-	E61029-005	NUMBER LABEL	1		C
	-	E307570-001	NUMBER LABEL	1		J

⚠ : Safety Parts

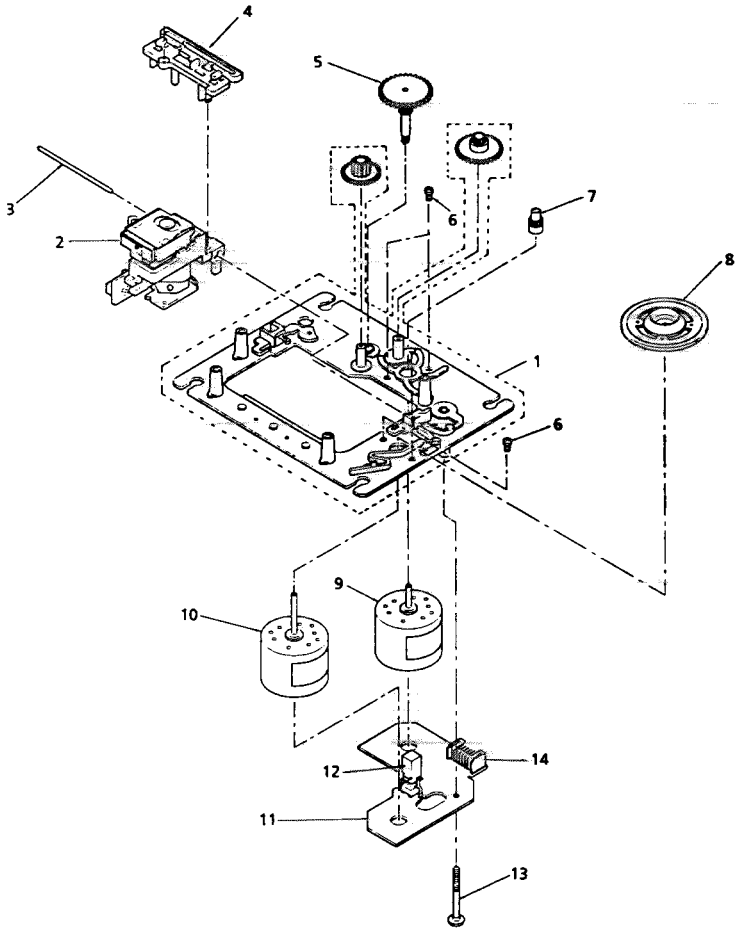
The Marks for Designated Areas

J ..... the U.S.A. C ..... Canada

No mark indicates all area.

CD Mechanism Ass'y and Parts List

Symbol No. M 2 M M



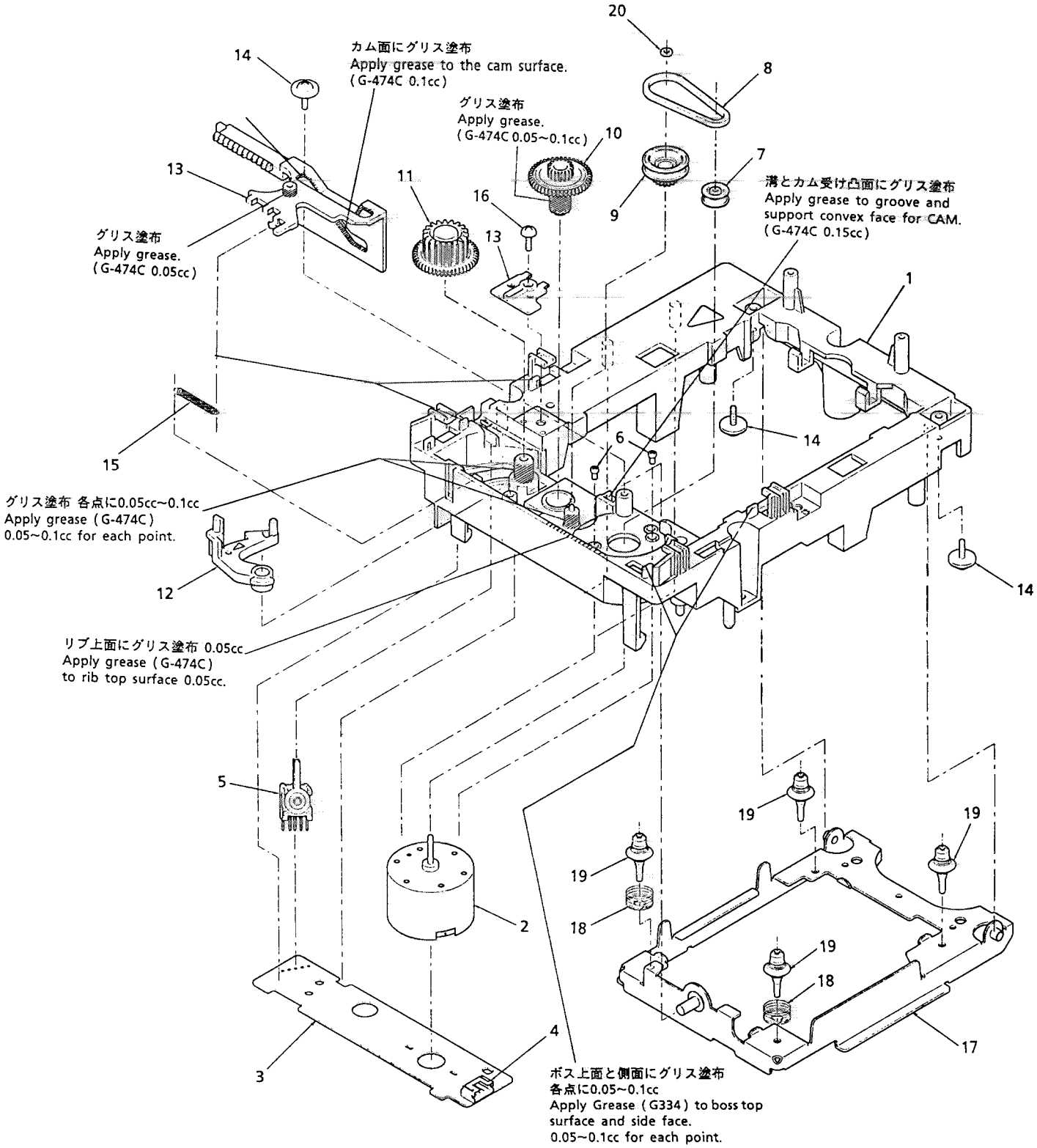
■ Parts List (CD Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	EPB-002A	MECHANISM BASE ASSY	1		
2	OPTIMA-6S	PICK UP ASSY	1		
3	E407782-001	SHAFT	1		
4	E307746-001	CD RACK	1		
5	EPB-003A	GEAR (3)	1		
6	SDSP2003N	SCREW	4		
7	E406750-001	PINION GEAR	1		
8	E75807-302	TURN TABLE	1		
9	E406784-001	FEED MOTOR	1		
10	E406783-001	SPINDLE MOTOR	1		
11	EMW10190-001(S)	CIRCUIT BOARD	1		
12	ESB1100-005	LEAF SWITCH	1		
13	E75832-001	SCREW	1		
14	EMV5109-006B	PLUG ASSY	1	6PIN	

Loading Mechanism Ass'y and Parts List

Symbol No. M 3 M M

■ Grease Point



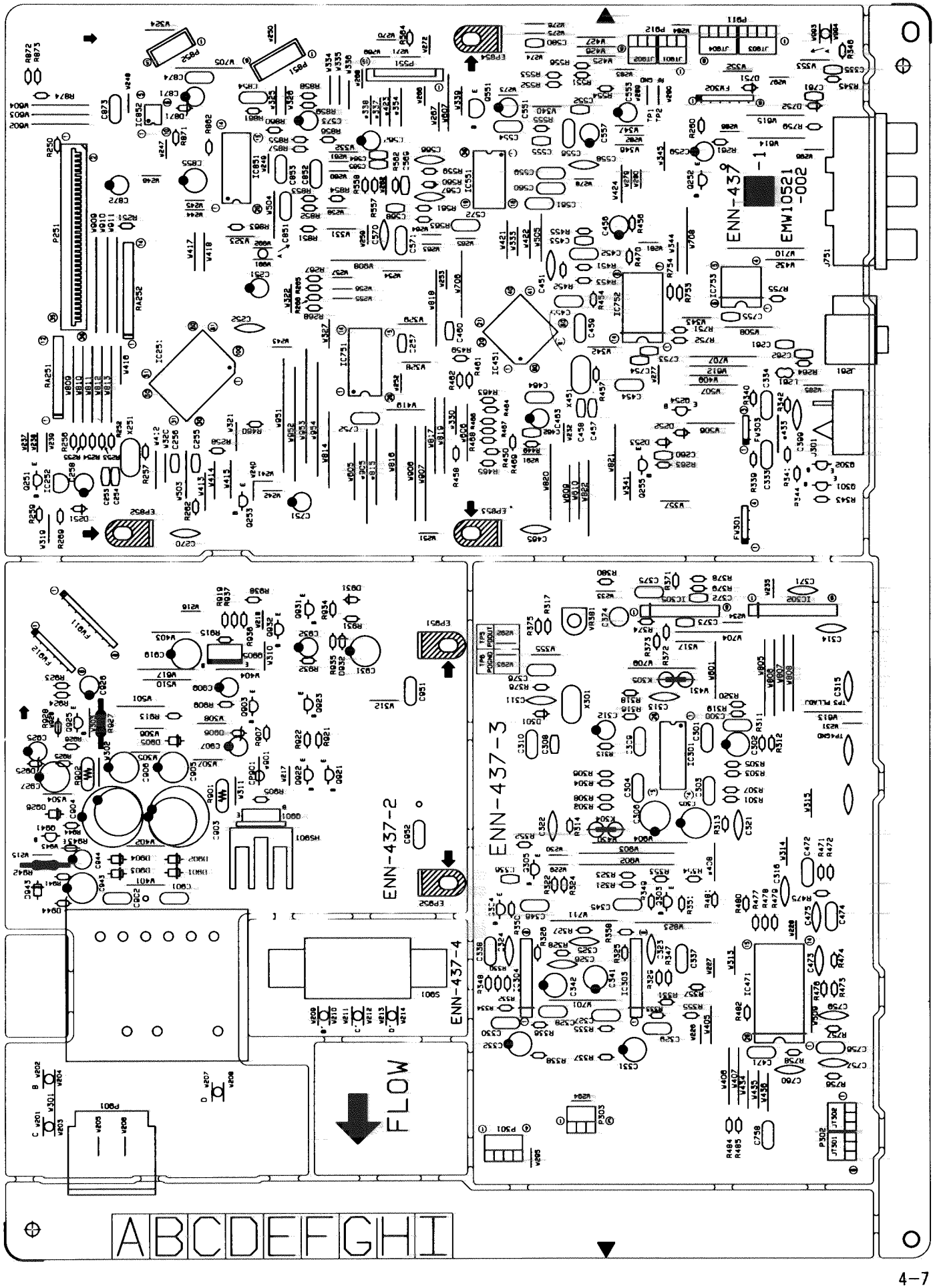
■ Parts List (Loading Mechanism Ass'y) Symbol No. M 3 M M

Item	Part Number	Part Name	Q'ty	Description	Area
1	E102357-221	LOADING BASE	1		
2	MMN-6F1LB8K	MOTOR	1		
3	EMW10264-002	CIRCUIT BOARD	1		
4	EMV5109-005B	5P PLUG ASSY	1		
5	ESS1200-002	SWITCH	1		
6	SPSK2640Z	SCREW	2		
7	E75984-221	MOTOR PULLEY	1		
8	E75950-002	BELT	1		
9	E75985-221	GEAR (1)	1		
10	E75986-221SS	GEAR (2)	1		
11	E75987-221SS	GEAR (3)	1		
12	E307162-331	LEVER	1		
13	E307252-331	CAM-PLATE	1		
14	E65923-003	SCREW	3		
15	E75989-001	SPRING	1		
16	SBSF3008Z	SCREW	1		
17	E307179-332	ELEVATOR BASE ASSY	1		
18	E406871-001	SPRING	2		
19	E406294-002	INSULATOR	4	BLACK	
20	E60912-005SS	SPEED NUT	1		

Printed Circuit Board Ass'y and Parts List

■ ENN-437 □ Main PC Board Ass'y

Note : ENN-437 □ varies according to the areas employd. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Dasignated Areas
ENN-437 A	J	the U.S.A.
ENN-437 B	C	Canada

TRANSISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q251	DTC144ES	DIGITAL TRA ROHM	
	Q252	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q253	DTA144ES	DIGITAL TRA ROHM	
	Q254	DTA114YS	DIGITAL TRA ROHM	
	Q255	DTC114YS	DIGITAL TRA ROHM	
	Q301	2SD1302	SI.TRANSIST MATSUSHITA	
	Q302	2SD1302	SI.TRANSIST MATSUSHITA	
	Q303	2SD1302	SI.TRANSIST MATSUSHITA	
	Q304	2SD1302	SI.TRANSIST MATSUSHITA	
	Q305	DTA144ES	DIGITAL TRA ROHM	
	Q306	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q307	DTA144ES	DIGITAL TRA ROHM	
	Q551	2SA950(O,Y)	SI.TRANSIST TOSHIBA	
	Q901	2SB1565(E,F)	SI.TRANSIST ROHM	
	Q903	2SD1302	SI.TRANSIST MATSUSHITA	
	Q905	2SB1357(E,F)	SI.TRANSIST ROHM	
	Q921	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q922	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q923	DTA114YS	DIGITAL TRA ROHM	
	Q931	2SA933S(RS)	SI.TRANSIST	
	Q932	2SD2144S(VW)	SI.TRANSIST ROHM	
	Q941	2SA933S(RS)	SI.TRANSIST	

I. C. S.

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC251	M38184E8-401FP	I.C(MICRO-C MITSUBISHI	C
	IC251	M38184E8-401FP	I.C(MICRO-C MITSUBISHI	J
	IC252	MN1281(P,Q)	I.C(DIGI-MO MATSUSHITA	
	IC301	MN35502	I.C(DIGI-MO MATSUSHITA	
	IC302	TC5081AP	I.C(DIGI-MO TOSHIBA	
	IC303	M5218AL	I.C(MONO-AN MITSUBISHI	
	IC304	M5218AL	I.C(MONO-AN MITSUBISHI	
	IC305	M5218AL	I.C(MONO-AN MITSUBISHI	
	IC451	MN662720RB	I.C(DIGI-MO MATSUSHITA	
	IC471	TC9245N	I.C(DIGI-MO TOSHIBA	
	IC551	AN8806SB	I.C(M) MATSUSHITA	
	IC751	UPD71051GU	I.C(MICRO-C NEC	
	IC752	HD74LS05P	I.C(DIGI-OT HITACHI	
	IC753	SN75451BP	I.C(MONO-AN 1679	
	IC851	BA6398FP	I.C(MONO-AN ROHM	
	IC852	TA8409FTP1	I.C(MONO-AN TOSHIBA	

DIODES

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	D251	1SS133	SI.DIODE ROHM	
	D252	1SS133	SI.DIODE ROHM	
	D253	1SS133	SI.DIODE ROHM	
	D301	1SV145B-T3	DIODE HITACHI	
	D751	1SS133	SI.DIODE ROHM	
	D752	1SS133	SI.DIODE ROHM	
	D871	MTZ5.1JB	ZENER DIODE ROHM	C
	D871	MTZ5.1JB	ZENER DIODE ROHM	J
	D872	1SS133	SI.DIODE ROHM	C
	D872	1SS133	SI.DIODE ROHM	J
	D901	11E2	SI.DIODE NIHONINTER	
	D902	11E2	SI.DIODE NIHONINTER	
	D903	11E2	SI.DIODE NIHONINTER	
	D904	11E2	SI.DIODE NIHONINTER	
	D905	11E2	SI.DIODE NIHONINTER	
	D906	MTZ5.6JA	ZENER DIODE ROHM	
	D931	1SS133	SI.DIODE ROHM	
	D932	1SS133	SI.DIODE ROHM	
	D943	11E2	SI.DIODE NIHONINTER	

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	C251	QETB1HM-106	10MF 50V E.CAPACITO	
	C252	QCF21HP-223A	0.022MF 50V CER.CAPACI	
	C253	QCT30CH-120Y	12PF 50V CER.CAPACI	
	C254	QCT30CH-120Y	12PF 50V CER.CAPACI	
	C256	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C258	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C259	QETB1HM-474	0.47MF 50V ELECTRO	
	C260	QCBB1HK-331Y	330PF 50V CER.CAPACI	
	C261	QCT30CH-180Y	18PF 50V CER.CAPACI	
	C262	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C300	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C301	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C302	QETB1AM-227	220MF 10V E.CAPACITO	
	C303	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C304	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C305	QETB1AM-477	470MF 10V E.CAPACITO	
	C306	QETB1AM-477	470MF 10V E.CAPACITO	
	C308	QCT30CH-150Y	15PF 50V CER.CAPACI	
	C309	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C310	QFV81HJ-104	0.1MF 50V THIN FILM	
	C311	QCF31HP-102Z	1000PF 50V CER.CAPACI	C
	C311	QCF31HP-102Z	1000PF 50V CER.CAPACI	J
	C312	QETB1AM-476	47MF 10V E.CAPACITO	
	C313	QCT30CH-100Y	10PF 50V CER.CAPACI	
	C314	QCS31HJ-150Z	15PF 50V CER.CAPACI	C
	C314	QCS31HJ-150Z	15PF 50V CER.CAPACI	J
	C315	QCS31HJ-150Z	15PF 50V CER.CAPACI	C
	C315	QCS31HJ-150Z	15PF 50V CER.CAPACI	J
	C316	QCS31HJ-150Z	15PF 50V CER.CAPACI	C
	C316	QCS31HJ-150Z	15PF 50V CER.CAPACI	J
	C321	QCS21HJ-181A	180PF 50V CER.CAPACI	
	C322	QCS21HJ-181A	180PF 50V CER.CAPACI	
	C323	QCS31HJ-121Z	120PF 50V CER.CAPACI	
	C324	QCS31HJ-121Z	120PF 50V CER.CAPACI	
	C325	QCS31HJ-121Z	120PF 50V CER.CAPACI	
	C326	QCS31HJ-121Z	120PF 50V CER.CAPACI	
	C327	QFN81HJ-182	1800PF 50V METAL.MYLA	
	C328	QFN81HJ-182	1800PF 50V METAL.MYLA	
	C329	QFV81HJ-103	0.01MF 50V THIN FILM	
	C330	QFV81HJ-103	0.01MF 50V THIN FILM	
	C331	QETB1HM-476	47MF 50V E.CAPACITO	
	C332	QETB1HM-476	47MF 50V E.CAPACITO	
	C333	QFN81HJ-472	4700PF 50V MYLAR CAPA	
	C334	QFN81HJ-472	4700PF 50V MYLAR CAPA	
	C335	QCVB1CM-103Y	0.01MF 16V CER.CAPACI	
	C336	QCVB1CM-103Y	0.01MF 16V CER.CAPACI	
	C337	QFN81HJ-683	0.068MF 50V METAL.MYLA	
	C338	QFN81HJ-683	0.068MF 50V METAL.MYLA	
	C341	QETB1HM-476	47MF 50V E.CAPACITO	
	C342	QETB1HM-476	47MF 50V E.CAPACITO	
	C345	QFV71HJ-124ZM	0.12MF 50V THIN FILM	C
	C345	QFV71HJ-124ZM	0.12MF 50V THIN FILM	J
	C346	QFV71HJ-124ZM	0.12MF 50V THIN FILM	C
	C346	QFV71HJ-124ZM	0.12MF 50V THIN FILM	J
	C371	QCF21HP-223A	0.022MF 50V CER.CAPACI	
	C372	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C373	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C374	QENB1HM-474	0.47MF 50V NP E.CAPAC	C
	C374	QENB1HM-474	0.47MF 50V NP E.CAPAC	J
	C375	QFN81HJ-153	0.015MF 50V MYLAR CAPA	C
	C375	QFN81HJ-153	0.015MF 50V MYLAR CAPA	J
	C376	QFN81HJ-102	1000PF 50V METAL.MYLA	C
	C376	QFN81HJ-102	1000PF 50V METAL.MYLA	J
	C451	QCS31HJ-471Z	470PF 50V CER.CAPACI	
	C452	QFN81HJ-223	0.022MF 50V METAL.MYLA	
	C453	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C454	QFV71HJ-334ZM	0.33MF 50V THIN FILM	
	C455	QFV81HJ-104	0.1MF 50V THIN FILM	
	C456	QETB1AM-107	100MF 10V AL E.CAPAC	
	C457	QCT30CH-100Y	10PF 50V CER.CAPACI	
	C458	QCT30CH-120Y	12PF 50V CER.CAPACI	
	C459	QFV81HJ-104	0.1MF 50V THIN FILM	
	C460	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C463	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C464	QFV81HJ-104	0.1MF 50V THIN FILM	
	C471	QFV81HJ-104	0.1MF 50V THIN FILM	
	C472	QFV81HJ-104	0.1MF 50V THIN FILM	
	C473	QCS31HJ-221Z	220PF 50V CER.CAPACI	
	C474	QFN81HJ-473	0.047MF 50V METAL.MYLA	
	C475	QCS31HJ-121Z	120PF 50V CER.CAPACI	
	C551	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C552	QCSB1HJ-680	68PF 50V CER.CAPACI	
	C553	QETB0JM-476	47MF 6.3V AL E.CAPAC	
	C554	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C555	QCT30CH-3R3Y	3.3PF 50V CER.CAPACI	
	C556	QFV81HJ-104	0.1MF 50V THIN FILM	
	C557	QETB1HM-105	1MF 50V AL E.CAPAC	
	C558	QCS31HJ-101Z	100PF 50V CER.CAPACI	
	C559	QFV81HJ-273	0.027MF 50V THIN FILM	
	C560	QFN81HJ-472	4700PF 50V MYLAR CAPA	
	C561	QFN31HJ-332Z	3300PF 50V MYLAR CAPA	
	C562	QETB1AM-476	47MF 10V E.CAPACITO	
	C564	QCHB1EZ-223	0.022MF 25V CER.CAPACI	

CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C567	QCS31HJ-470Z	47PF	50V	CER.CAPACI	
	C568	QCHB1EZ-223	0.022MF	25V	CER.CAPACI	
	C569	QCHB1EZ-223	0.022MF	25V	CER.CAPACI	
	C570	QCS31HJ-821Z	820PF	50V	CER.CAPACI	
	C571	QFV81HJ-104	0.1MF	50V	THIN FILM	
	C572	QFV81HJ-104	0.1MF	50V	THIN FILM	
	C573	QETC1EM-106ZM	10MF	25V	AL E.CAPAC	
	C751	QETC1EM-106ZM	10MF	25V	AL E.CAPAC	
	C752	QFV81HJ-104	0.1MF	50V	THIN FILM	
	C753	QCBB1HK-101Y	100PF	50V	CER.CAPACI	
	C754	QCHB1EZ-223	0.022MF	25V	CER.CAPACI	
	C755	QCHB1EZ-223	0.022MF	25V	CER.CAPACI	
	C756	QFN81HJ-102	1000PF	50V	METAL.MYLA	
	C757	QCS31HJ-331Z	330PF	50V	CER.CAPACI	C
	C757	QCS31HJ-331Z	330PF	50V	CER.CAPACI	J
	C758	QFN81HJ-102	1000PF	50V	METAL.MYLA	C
	C758	QFN81HJ-102	1000PF	50V	METAL.MYLA	J
	C759	QCS31HJ-270Z	27PF	50V	CER.CAPACI	C
	C759	QCS31HJ-270Z	27PF	50V	CER.CAPACI	J
	C760	QCS31HJ-270Z	27PF	50V	CER.CAPACI	C
	C760	QCS31HJ-270Z	27PF	50V	CER.CAPACI	J
	C851	QFN81HJ-273	0.027MF	50V	METAL.MYLA	
	C852	QFN81HJ-183	0.018MF	50V	METAL.MYLA	
	C853	QFV81HJ-104	0.1MF	50V	THIN FILM	
	C854	QFN81HJ-273	0.027MF	50V	METAL.MYLA	
	C855	QETB1CM-107	100MF	16V	AL E.CAPAC	
	C871	QETC1EM-106ZM	10MF	25V	AL E.CAPAC	
	C872	QETC1EM-106ZM	10MF	25V	AL E.CAPAC	
	C873	QFV81HJ-104	0.1MF	50V	THIN FILM	
	C874	QCZ0205-155	1.5MF	25V	C.CAPACITO	C
	C874	QCZ0205-155	1.5MF	25V	C.CAPACITO	J
	C901	QCF31HP-473Z	0.047MF	50V	CER.CAPACI	C
	C901	QCF31HP-473Z	0.047MF	50V	CER.CAPACI	J
	C902	QCF31HP-473Z	0.047MF	50V	CER.CAPACI	C
	C902	QCF31HP-473Z	0.047MF	50V	CER.CAPACI	J
	C903	QETB1CM-228M	2200MF	16V	E.CAPACITO	C
	C903	QETB1CM-228M	2200MF	16V	E.CAPACITO	J
	C904	QETB1CM-228M	2200MF	16V	E.CAPACITO	
	C905	QETB1CM-227	220MF	16V	AL E.CAPAC	
	C906	QETB1CM-227	220MF	16V	AL E.CAPAC	
	C907	QETB1HM-225	2.2MF	50V	AL E.CAPAC	
	C909	QETB1AM-476	47MF	10V	E.CAPACITO	
	C919	QETC0JM-477ZN	470MF	6.3V	AL E.CAPAC	
	C931	QETB1CM-227	220MF	16V	AL E.CAPAC	
	C932	QETC1EM-106ZM	10MF	25V	AL E.CAPAC	
	C943	QETB1HM-107	100MF	50V	E.CAPACITO	
	C944	QETB1HM-475E	4.7MF	50V	E.CAPACITO	C
	C944	QETB1HM-475E	4.7MF	50V	E.CAPACITO	J

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R250	QRD161J-473	47K	1/6W	CARBON RES	
	R251	QRD161J-104	100K	1/6W	CARBON RES	
	R252	QRD161J-473	47K	1/6W	CARBON RES	
	R253	QRD161J-473	47K	1/6W	CARBON RES	
	R254	QRD161J-473	47K	1/6W	CARBON RES	
	R255	QRD161J-473	47K	1/6W	CARBON RES	
	R256	QRD161J-473	47K	1/6W	CARBON RES	
	R257	QRD161J-105	1M	1/6W	CARBON RES	
	R258	QRD161J-101	100	1/6W	CARBON RES	
	R259	QRD161J-472	4.7K	1/6W	CARBON RES	
	R260	QRD161J-473	47K	1/6W	CARBON RES	
	R261	QRD161J-472	4.7K	1/6W	CARBON RES	
	R262	QRD161J-472	4.7K	1/6W	CARBON RES	
	R263	QRD161J-472	4.7K	1/6W	CARBON RES	
	R264	QRD161J-471	470	1/6W	CARBON RES	
	R265	QRD161J-472	4.7K	1/6W	CARBON RES	
	R266	QRD161J-472	4.7K	1/6W	CARBON RES	
	R267	QRD161J-472	4.7K	1/6W	CARBON RES	
	R268	QRD161J-472	4.7K	1/6W	CARBON RES	
	R269	QRD161J-821	820	1/6W	CARBON RES	
△	R301	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R301	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R302	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R302	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R303	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R303	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R304	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R304	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R305	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R305	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R306	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R306	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R307	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R307	QRV144F-3302	33K	1/4W	METAL FILM	J
△	R308	QRV144F-3302	33K	1/4W	METAL FILM	C
△	R308	QRV144F-3302	33K	1/4W	METAL FILM	J
	R311	QRD167J-560	56	1/6W	CARBON RES	
	R312	QRD167J-560	56	1/6W	CARBON RES	
	R313	QRD161J-101	100	1/6W	CARBON RES	
	R314	QRD161J-101	100	1/6W	CARBON RES	

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R315	QRD161J-471	470	1/6W	CARBON RES	
	R316	QRD161J-101	100	1/6W	CARBON RES	
	R317	QRD161J-104	100K	1/6W	CARBON RES	
	R318	QRD161J-103	10K	1/6W	CARBON RES	C
	R318	QRD161J-103	10K	1/6W	CARBON RES	J
	R319	QRD167J-682	6.8K	1/6W	CARBON RES	C
	R319	QRD167J-682	6.8K	1/6W	CARBON RES	J
	R320	QRD161J-103	10K	1/6W	CARBON RES	C
	R320	QRD161J-103	10K	1/6W	CARBON RES	J
	R321	QRD161J-183	18K	1/6W	CARBON RES	
	R322	QRD161J-183	18K	1/6W	CARBON RES	
	R323	QRD161J-183	18K	1/6W	CARBON RES	
	R324	QRD161J-183	18K	1/6W	CARBON RES	
	R325	QRD161J-333	33K	1/6W	CARBON RES	
	R326	QRD161J-333	33K	1/6W	CARBON RES	
	R327	QRD161J-333	33K	1/6W	CARBON RES	
	R328	QRD161J-333	33K	1/6W	CARBON RES	
	R329	QRD167J-511	510	1/6W	CARBON RES	
	R330	QRD167J-511	510	1/6W	CARBON RES	
	R331	QRD161J-681	680	1/6W	CARBON RES	
	R332	QRD161J-681	680	1/6W	CARBON RES	
	R333	QRD161J-112	1.1K	1/6W	CARBON RES	
	R334	QRD161J-112	1.1K	1/6W	CARBON RES	
	R335	QRD161J-472	4.7K	1/6W	CARBON RES	
	R336	QRD161J-472	4.7K	1/6W	CARBON RES	
	R337	QRD161J-273	27K	1/6W	CARBON RES	
	R338	QRD161J-273	27K	1/6W	CARBON RES	
	R339	QRD161J-301	300	1/6W	CARBON RES	
	R340	QRD161J-301	300	1/6W	CARBON RES	
	R341	QRD167J-151	150	1/6W	CARBON RES	
	R342	QRD167J-151	150	1/6W	CARBON RES	
	R343	QRD161J-103	10K	1/6W	CARBON RES	
	R344	QRD161J-103	10K	1/6W	CARBON RES	
	R345	QRD161J-684	680K	1/6W	CARBON RES	
	R346	QRD167J-154	150K	1/6W	CARBON RES	
	R347	QRD161J-241	240	1/6W	CARBON RES	
	R348	QRD161J-241	240	1/6W	CARBON RES	
	R349	QRD161J-104	100K	1/6W	CARBON RES	
	R350	QRD161J-104	100K	1/6W	CARBON RES	
	R351	QRD161J-392	3.9K	1/6W	CARBON RES	
	R352	QRD161J-392	3.9K	1/6W	CARBON RES	
	R353	QRD161J-684	680K	1/6W	CARBON RES	
	R354	QRD167J-154	150K	1/6W	CARBON RES	
	R355	QRD161J-221	220	1/6W	CARBON RES	
	R357	QRD161J-221	220	1/6W	CARBON RES	
	R358	QRD161J-221	220	1/6W	CARBON RES	C
	R358	QRD161J-221	220	1/6W	CARBON RES	J
	R371	QRD161J-222	2.2K	1/6W	CARBON RES	C
	R371	QRD161J-222	2.2K	1/6W	CARBON RES	J
	R372	QRD161J-103	10K	1/6W	CARBON RES	
	R373	QRD167J-682	6.8K	1/6W	CARBON RES	C
	R373	QRD167J-682	6.8K	1/6W	CARBON RES	J
	R374	QRD161J-103	10K	1/6W	CARBON RES	C
	R374	QRD161J-103	10K	1/6W	CARBON RES	J
	R375	QRD161J-473	47K	1/6W	CARBON RES	
	R376	QRD161J-473	47K	1/6W	CARBON RES	
	R378	QRD161J-103	10K	1/6W	CARBON RES	
	R379	QRD161J-103	10K	1/6W	CARBON RES	
	R380	QRD161J-472	4.7K	1/6W	CARBON RES	
	R385	QRD161J-472	4.7K	1/6W	CARBON RES	
	R449	QRD161J-561	560	1/6W	CARBON RES	
	R450	QRD161J-222	2.2K	1/6W	CARBON RES	
	R451	QRD167J-155	1.5M	1/6W	CARBON RES	
	R452	QRD161J-104	100K	1/6W	CARBON RES	
	R453	QRD161J-104	100K	1/6W	CARBON RES	
	R454	QRD161J-681	680	1/6W	CARBON RES	
	R455	QRD161J-124	120K	1/6W	CARBON RES	
	R456	QRD161J-2R2	2.2	1/6W	CARBON RES	
	R457	QRD167J-121	120	1/6W	CARBON RES	
	R458	QRD161J-102	1K	1/6W	CARBON RES	
	R459	QRD161J-102	1K	1/6W	CARBON RES	
	R460	QRD161J-102	1K	1/6W	CARBON RES	
	R461	QRD161J-102	1K	1/6W	CARBON RES	
	R462	QRD161J-102	1K	1/6W	CARBON RES	
	R463	QRD161J-102	1K	1/6W	CARBON RES	
	R464	QRD161J-102	1K	1/6W	CARBON RES	
	R465	QRD161J-102	1K	1/6W	CARBON RES	
	R466	QRD161J-102	1K	1/6W	CARBON RES	
	R467	QRD161J-102	1K	1/6W	CARBON RES	
	R468	QRD161J-102	1K	1/6W	CARBON RES	
	R469	QRD161J-222	2.2K	1/6W	CARBON RES	
	R470	QRD161J-2R2	2.2	1/6W	CARBON RES	
	R471	QRD167J-751	750	1/6W	CARBON RES	
	R472	QRD167J-751	750	1/6W	CARBON RES	
	R473	QRD167J-751	750	1/6W	CARBON RES	
	R474	QRD161J-333	33K	1/6W	CARBON RES	C
	R474	QRD161J-333	33K	1/6W	CARBON RES	J
	R475	QRD161J-122	1.2K	1/6W	CARBON RES	
	R476	QRD161J-203	20K	1/6W	CARBON RES	
	R477	QRD161J-102	1K	1/6W	CARBON RES	
	R478	QRD161J-221	220	1/6W	CARBON RES	C
	R478	QRD161J-221	220	1/6W	CARBON RES	J
	R479	QRD161J-103	10K	1/6W	CARBON RES	C
	R479	QRD161J-103	10K	1/6W	CARBON RES	J
	R480	QRD161J-102	1K	1/6W	CARBON RES	

XL-MC301C

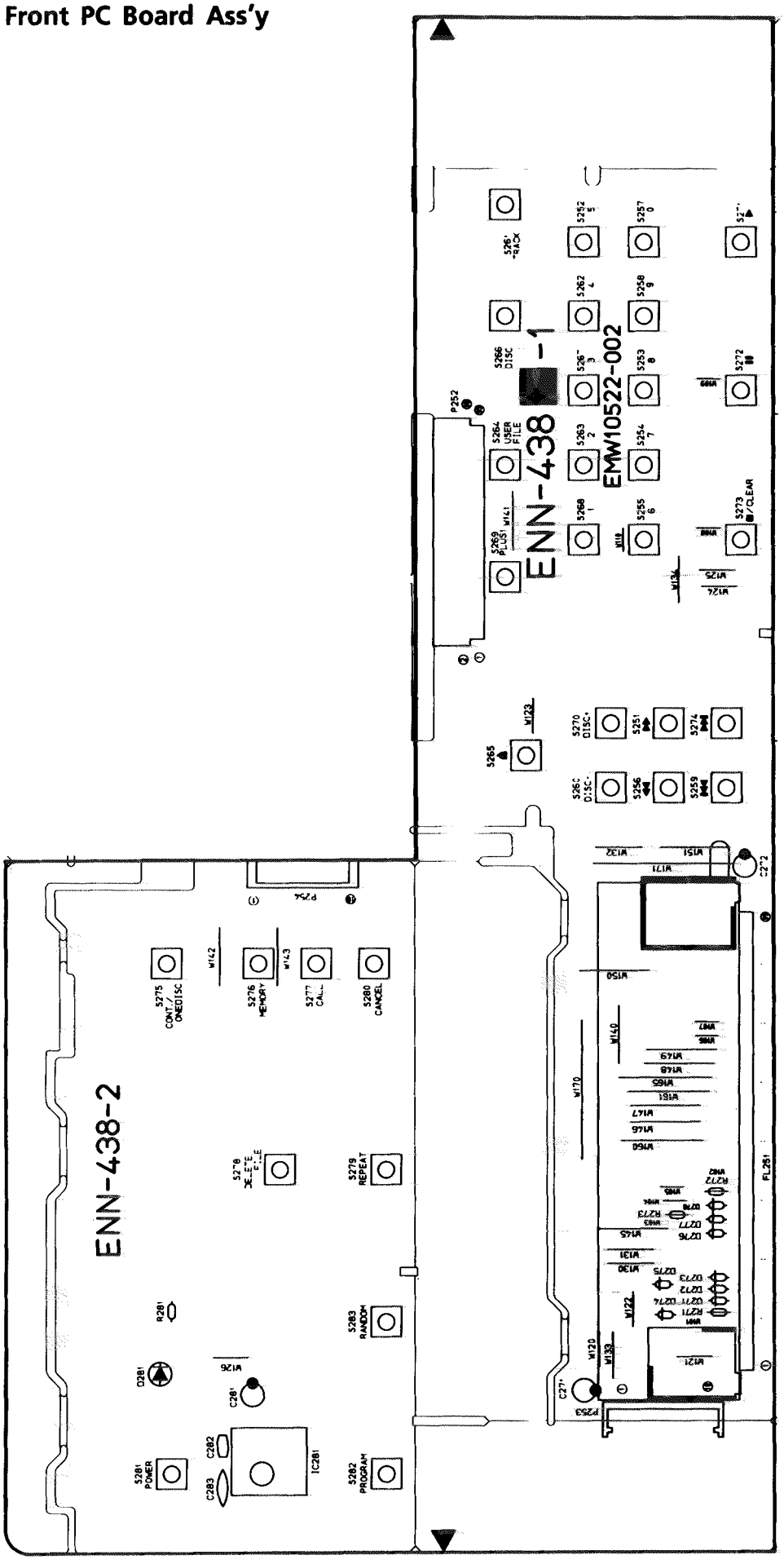
RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R481	QRD161J-102	1K	1/6W	CARBON RES	
	R482	QRD161J-102	1K	1/6W	CARBON RES	
	R484	QRD161J-102	1K	1/6W	CARBON RES	C
	R484	QRD161J-102	1K	1/6W	CARBON RES	J
	R485	QRD161J-102	1K	1/6W	CARBON RES	C
	R485	QRD161J-102	1K	1/6W	CARBON RES	J
	R551	QRD161J-470	47	1/6W	CARBON RES	
	R552	QRD161J-470	47	1/6W	CARBON RES	
	R553	QRD161J-470	47	1/6W	CARBON RES	
	R554	QRD161J-2R2	2.2	1/6W	CARBON RES	
	R555	QRD161J-123	12K	1/6W	CARBON RES	
	R556	QRD167J-121	120	1/6W	CARBON RES	
	R557	QRD167J-134	130K	1/6W	CARBON RES	
	R558	QRD161J-913	91K	1/6W	CARBON RES	
	R559	QRD161J-273	27K	1/6W	CARBON RES	
	R560	QRD161J-114	110K	1/6W	CARBON RES	
	R561	QRD167J-154	150K	1/6W	CARBON RES	
	R562	QRD161J-394	390K	1/6W	CARBON RES	
	R563	QRD161J-103	10K	1/6W	CARBON RES	
	R564	QRD161J-910Y	91	1/6W	CARBON RES	
	R751	QRD161J-102	1K	1/6W	CARBON RES	
	R752	QRD161J-221	220	1/6W	CARBON RES	
	R753	QRD161J-472	4.7K	1/6W	CARBON RES	
	R754	QRD161J-472	4.7K	1/6W	CARBON RES	
	R755	QRD161J-102	1K	1/6W	CARBON RES	
	R756	QRD167J-151	150	1/6W	CARBON RES	C
	R756	QRD167J-151	150	1/6W	CARBON RES	J
	R757	QRD167J-511	510	1/6W	CARBON RES	C
	R757	QRD167J-511	510	1/6W	CARBON RES	J
	R758	QRD167J-511	510	1/6W	CARBON RES	C
	R758	QRD167J-511	510	1/6W	CARBON RES	J
	R759	QRD167J-680	68	1/6W	CARBON RES	C
	R759	QRD167J-680	68	1/6W	CARBON RES	J
	R851	QRD167J-562	5.6K	1/6W	CARBON RES	
	R852	QRD161J-124	120K	1/6W	CARBON RES	
	R853	QRD161J-112	1.1K	1/6W	CARBON RES	
	R854	QRD167J-113	11K	1/6W	CARBON RES	
	R855	QRD167J-751	750	1/6W	CARBON RES	
	R856	QRD161J-752	7.5K	1/6W	CARBON RES	
	R857	QRD167J-223	22K	1/6W	CARBON RES	
	R858	QRD161J-392	3.9K	1/6W	CARBON RES	
	R859	QRD161J-363	36K	1/6W	CARBON RES	C
	R859	QRD161J-363	36K	1/6W	CARBON RES	J
	R860	QRD167J-332	3.3K	1/6W	CARBON RES	
	R861	QRD167J-153	15K	1/6W	CARBON RES	
	R862	QRD161J-752	7.5K	1/6W	CARBON RES	
	R863	QRD161J-821	820	1/6W	CARBON RES	
	R871	QRD161J-471	470	1/6W	CARBON RES	
	R872	QRD161J-472	4.7K	1/6W	CARBON RES	
	R873	QRD161J-472	4.7K	1/6W	CARBON RES	
	R874	QRD161J-472	4.7K	1/6W	CARBON RES	
△	R901	PTH61G30BD2R2N			FUSIBLE RE	C
△	R901	QRD14CJ-2R2SX	2.2	1/4W	UNF.CARBON	J
△	R902	PTH61G30BD2R2N			FUSIBLE RE	C
△	R902	QRD14CJ-2R2SX	2.2	1/4W	UNF.CARBON	J
	R905	QRD161J-222	2.2K	1/6W	CARBON RES	
	R907	QRD161J-221	220	1/6W	CARBON RES	
	R909	QRD161J-221	220	1/6W	CARBON RES	
	R913	QRD167J-152	1.5K	1/6W	CARBON RES	C
	R913	QRD167J-152	1.5K	1/6W	CARBON RES	J
	R915	QRD161J-102	1K	1/6W	CARBON RES	
	R919	QRD161J-821	820	1/6W	CARBON RES	
	R921	QRD161J-103	10K	1/6W	CARBON RES	
	R922	QRD161J-103	10K	1/6W	CARBON RES	
	R923	QRD167J-152	1.5K	1/6W	CARBON RES	
	R924	QRD167J-152	1.5K	1/6W	CARBON RES	
	R931	QRD161J-331	330	1/6W	CARBON RES	
	R932	QRD161J-221	220	1/6W	CARBON RES	
	R934	QRD167J-822	8.2K	1/6W	CARBON RES	
	R935	QRD161J-683	68K	1/6W	CARBON RES	
	R936	QRD161J-473	47K	1/6W	CARBON RES	
	R937	QRD161J-473	47K	1/6W	CARBON RES	
	R938	QRD161J-473	47K	1/6W	CARBON RES	
	R941	QRD161J-123	12K	1/6W	CARBON RES	
△	R942	QRZ0077-560	56	1/4W	FUSIBLE RE	C
	R943	QRD167J-121	120	1/6W	CARBON RES	C
	R944	QRD161J-563	56K	1/6W	CARBON RES	
	RA251	QRB119J-104	100K	1/10W	NETWORK RE	
	RA252	QRB139J-104	100K	1/10W	RESISTOR	
	VR381	QVPA601-103A	10K		TRIMMER RE	

OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		E70945-H35	HEAT SINK	
		SBSE3008Z	SCREW	
		QWE350-20RR	VINYL WIRE	
		EMW10521-003	PRINTED BOA	C
		QWE690-20RR	VINYL WIRE	C
		EMW10521-003	PRINTED BOA	J
		E3400-431	FELT SPACER	J
		QWE690-20RR	VINYL WIRE	J
	J261	QMS3501-020	PIN JACK	
	J301	EMN00TV-217A	PIN JACK	
	J751	EMN00YV-322A	PIN JACK	
	K304	ENZ8101-007	INDUCTOR	C
	K304	ENZ8101-007	INDUCTOR	J
	K305	ENZ8101-007	INDUCTOR	C
	K305	ENZ8101-007	INDUCTOR	J
	L261	EQL4004-1R0	INDUCTOR	
	P251	EMV7123-036	CONNECT TER	
	P301	EMV7122-004Z	CONNECT TER	C
	P301	EMV7122-004Z	CONNECT TER	J
	P302	EMV7122-005	MALE CONNEC	
	P303	EMV7122-103	CONNECT TER	
	P551	EMV7144-015	F.P.C.PLUG	
	P851	EMV5109-006A	CONNECT TER	
	P852	EMV5109-005A	MALE CONNEC	-
	P901	QMCB001-E03H	AC INLET	C
	P901	QMCB001-E03H	AC INLET	J
	X251	ECXA4R9-001N	CRYSTAL	
	X301	ECX0169-344ENAT	CRYSTAL	
	X451	ECX0169-344EA	CRYSTAL	
△	CP901	ICP-N10	I.C.PROTECT	C
	EP852	EMZ4002-001Z	EARTH PLATE	
	EP853	EMZ4002-001Z	EARTH PLATE	
	EP854	EMZ4002-001Z	EARTH PLATE	
	EP951	EMZ4002-001Z	EARTH PLATE	
	EP952	EMZ4002-001Z	EARTH PLATE	
	FW301	EWR34B-10LST	FLAT WIRE A	C
	FW301	EWR34B-10LST	FLAT WIRE A	J
	FW302	EWR36B-10LST	FLAT WIRE A	C
	FW302	EWR36B-10LST	FLAT WIRE A	J
	FW303	EWR33B-10LST	FLAT WIRE A	
	FW911	EWR38B-30LST	FLAT WIRE A	
	FW911	EWR38B-25LST	FLAT WIRE A	C
	FW911	EWR38B-25LST	FLAT WIRE A	J
	FW912	EWR36B-25LST	FLAT WIRE A	
	JT301	EMV7122-103	CONNECT TER	C
	JT301	EMV7122-103	CONNECT TER	J
	JT302	EMV7122-103	CONNECT TER	C
	JT302	EMV7122-103	CONNECT TER	J
	JT901	EMV7122-103	CONNECT TER	
	JT902	EMV7122-103	CONNECT TER	
	JT903	EMV7122-004Z	CONNECT TER	
	JT904	EMV7122-004Z	CONNECT TER	
	JT905	EMV7122-103	CONNECT TER	
	JT906	EMV7122-103	CONNECT TER	
	SP251	VYH7653-003	I.C.PROTECT	
	SP301	VYH7653-002	I.C.SOCKET	
	SP551	VYH7653-002	I.C.SOCKET	
	SP851	VYH7653-002	I.C.SOCKET	
	SP852	VYH7653-004	I.C.PROTECT	

■ ENN-438 [A] Front PC Board Ass'y



I. C. S.

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC281	GP1U571X	INFRARED DE SHARP	

DIODES

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D271	1SS133	SI.DIODE ROHM	
	D272	1SS133	SI.DIODE ROHM	
	D273	1SS133	SI.DIODE ROHM	
	D274	1SS133	SI.DIODE ROHM	
	D275	1SS133	SI.DIODE ROHM	
	D276	1SS133	SI.DIODE ROHM	
	D277	1SS133	SI.DIODE ROHM	
	D278	1SS133	SI.DIODE ROHM	
	D281	SLH-56VC50F130	L.E.D.	C
	D281	SLH-56VC50F130	L.E.D.	J

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C271	QER51HM-475	4.7MF 50V AL E.CAPAC	
	C272	QER51HM-475	4.7MF 50V AL E.CAPAC	
	C281	QER50JM-476	47MF 6.3V AL E.CAPAC	
	C282	QCHB1EZ-223	0.022MF 25V CER.CAPACI	

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R281	QRD161J-331	330 1/6W CARBON RES	

OTHERS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E75819-001	SUPPORT HOL	
		E75820-001	SUPPORT HOL	
		E3400-439	FELT SPACER	
		EMW10522-002	PRINTED BOA	C
		EMW10522-002	PRINTED BOA	J
	P252	EMV7123-036R	CONNECT TER	
	P253	EMV5120-010	MALE CONNEC	
	P254	EMV7120-010	MALE CONNEC	
	S251	ESP0001-023M	TACT SWITCH(⏩)	
	S252	ESP0001-023M	TACT SWITCH(5)	
	S253	ESP0001-023M	TACT SWITCH(8)	
	S254	ESP0001-023M	TACT SWITCH(7)	
	S255	ESP0001-023M	TACT SWITCH(6)	
	S256	ESP0001-023M	TACT SWITCH(⏪)	
	S257	ESP0001-023M	TACT SWITCH(0)	
	S258	ESP0001-023M	TACT SWITCH(9)	
	S259	ESP0001-023M	TACT SWITCH(⏮)	
	S260	ESP0001-023M	TACT SWITCH(DISC −)	
	S261	ESP0001-023M	TACT SWITCH(TRACK)	
	S262	ESP0001-023M	TACT SWITCH(4)	
	S263	ESP0001-023M	TACT SWITCH(2)	
	S264	ESP0001-023M	TACT SWITCH(USER FILE)	
	S265	ESP0001-023M	TACT SWITCH(⏏)	
	S266	ESP0001-023M	TACT SWITCH(DISC)	
	S267	ESP0001-023M	TACT SWITCH(3)	
	S268	ESP0001-023M	TACT SWITCH(1)	
	S269	ESP0001-023M	TACT SWITCH(PLUS 1)	
	S270	ESP0001-023M	TACT SWITCH(DISC +)	
	S271	ESP0001-023M	TACT SWITCH(▶)	
	S272	ESP0001-023M	TACT SWITCH(⏸)	
	S273	ESP0001-023M	TACT SWITCH(■/CLEAR)	
	S274	ESP0001-023M	TACT SWITCH(⏭)	
	S275	ESP0001-023M	TACT SWITCH(CONT. / ONE DISC)	
	S276	ESP0001-023M	TACT SWITCH(MEMORY)	
	S277	ESP0001-023M	TACT SWITCH(CALL)	
	S278	ESP0001-023M	TACT SWITCH(DELETE FILE)	
	S279	ESP0001-023M	TACT SWITCH(REPEAT)	
	S280	ESP0001-023M	TACT SWITCH(CANCEL)	
	S281	ESP0001-023M	TACT SWITCH(POWER)	
	S282	ESP0001-023M	TACT SWITCH(PROGRAM)	
	S283	ESP0001-023M	TACT SWITCH(RANDOM)	
	FL251	ELU0001-200	FLUORESCENT	

XL-MC301M

<Parts List>

Note : All printed circuit boards and its assemblies are not available as service parts.

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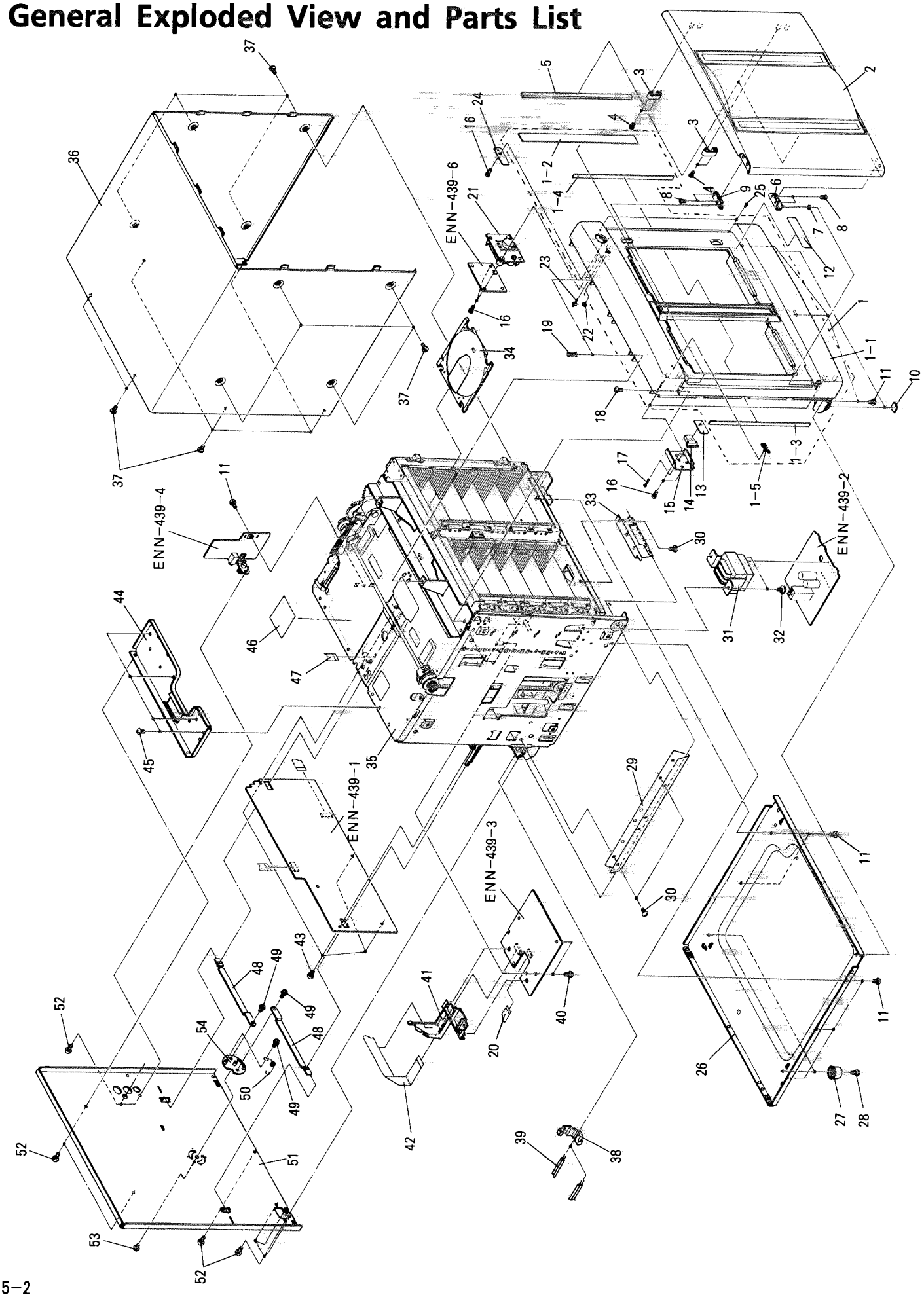
■ ENN-393 [A] Mecha Switch PC Board Ass'y 5-15
Accessories 5-16

Symbol No. M 3 M M

General Exploded View and Parts List



■ Parts List

Symbol No. M 3 M M

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	EFP-XLMC301MJ(S	FRONT PANEL ASSY	1		
	1-1	E102783-011ST	FRONT PANEL	1		
	1-2	E208017-003	WINDOW SCREEN	1		
	1-3	E308770-001	NUMBER PLATE	1		
	1-4	E308770-002	NUMBER PLATE	1		
	1-5	E406971-221	JVC MARK	1		
	2	E102785-004	CD DOOR	1		
	3	E407847-002	HOOK	2		
	4	SPSF2608M	TAPPING SCREW	4		
	5	E408068-001	SPACER	2		
	6	E308783-002	DOOR BRACKET	1	LOWER	
	7	Q03093-814	POLY WASHER	1		
	8	SHSP2606M	SCREW	4		
	9	E308783-001	DOOR BRACKET	1	UPPER	
	10	E406855-008	SPACER	2		
	11	SBSG3008M	TAPPING SCREW	10		
	12	E308933-001	CAUTION LABEL	1		J
	13	E407877-002	SPRING	2		
	14	E407862-001	HINGE HOLDER	2		
	15	E407861-001	HINGE BRACKET	2		
	16	SDSF2608Z	SCREW	7		
	17	SPSP2610Z	SCREW	2		
	18	GBSG3008Z	TAPPING SCREW	1		
	19	E48729-002	PLASTIC RIVET	2		
	20	EWR615M-10BB-X	FLAT WIRE ASSY	1		
	21	E308735-005ST	PUSH BUTTON	1		
	22	E406686-001	C.D INDICATOR	1		
	23	E407901-001	PUSH ROD	1		
	24	E407902-002	SPRING	1		
	25	E69897-002	RUBBER CUSHION	2		
	26	E102782-001	CHASSIS BASE	1		
	27	E47227-010	FOOT ASSY	2		
	28	SBSG3010Z	TAPPING SCREW	2		
	29	E308895-001	PROTECT SHEET	1		
	30	GBSG3008Z	TAPPING SCREW	3		
⚠	31	ETP1010-59JA	POWER TRANSFORMER	1		
	32	E65389-002	SPECIAL SCREW	2		
	33	E308894-001	PROTECTOR COVER	1		
	34	E102740-002	CD TRAY	100		
	35	————————	CHANGER MECHANISM ASSY	1	See page 5-5	
	36	E102789-003	METAL COVER	1		
	37	SDSG3008M	TAPPING SCREW	14		
⚠	38	QHS3771-108	CORD STOPPER	1		
⚠	39	QMP1400-244	POWER CORD	1		
	40	SBSF2608Z	TAPPING SCREW	2		
	41	E308717-002	WIRE HOLDER	1		
	42	EWPZ01-003	FFC CABLE	1		
	43	SBSG3008Z	TAPPING SCREW	4		
	44	E208031-002	REAR BRACKET	1		
	45	SBST3006Z	TAPPING SCREW	4		
	46	E406507-001	CAUTION LABEL	1		C
	47	EWR115M-17BB	FFC CABLE	1		
	48	E308772-001	LOCK PLATE	2		
	49	E72405-001	SPECIAL SCREW	3		
	50	E407932-001	TORSION SPRING	1		

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	51	E103017-009	REAR PANEL	1		J
		E103017-010	REAR PANEL	1		C
	52	E73273-006	SPECIAL SCREW	9		
	53	E72405-002	SPECIAL SCREW	1		
	54	E308773-001	LOCK KNOB	1		
	-	E307570-001	NUMBER LABEL	1		J
	-	E61029-005	NUMBER LABEL	1		C

⚠ : Safety Parts

The Marks for Designated Areas

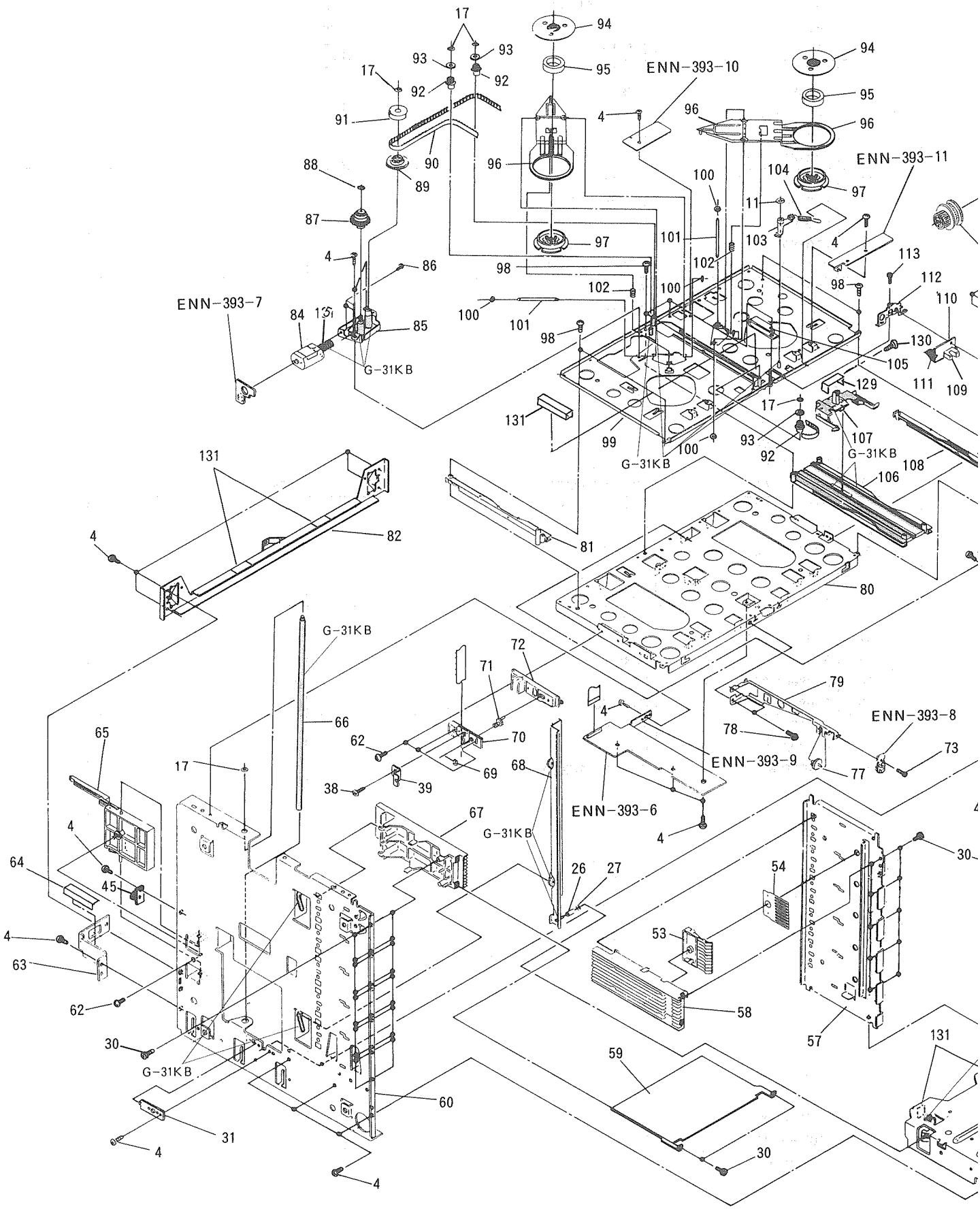
J ..... the U.S.A. C ..... Canada

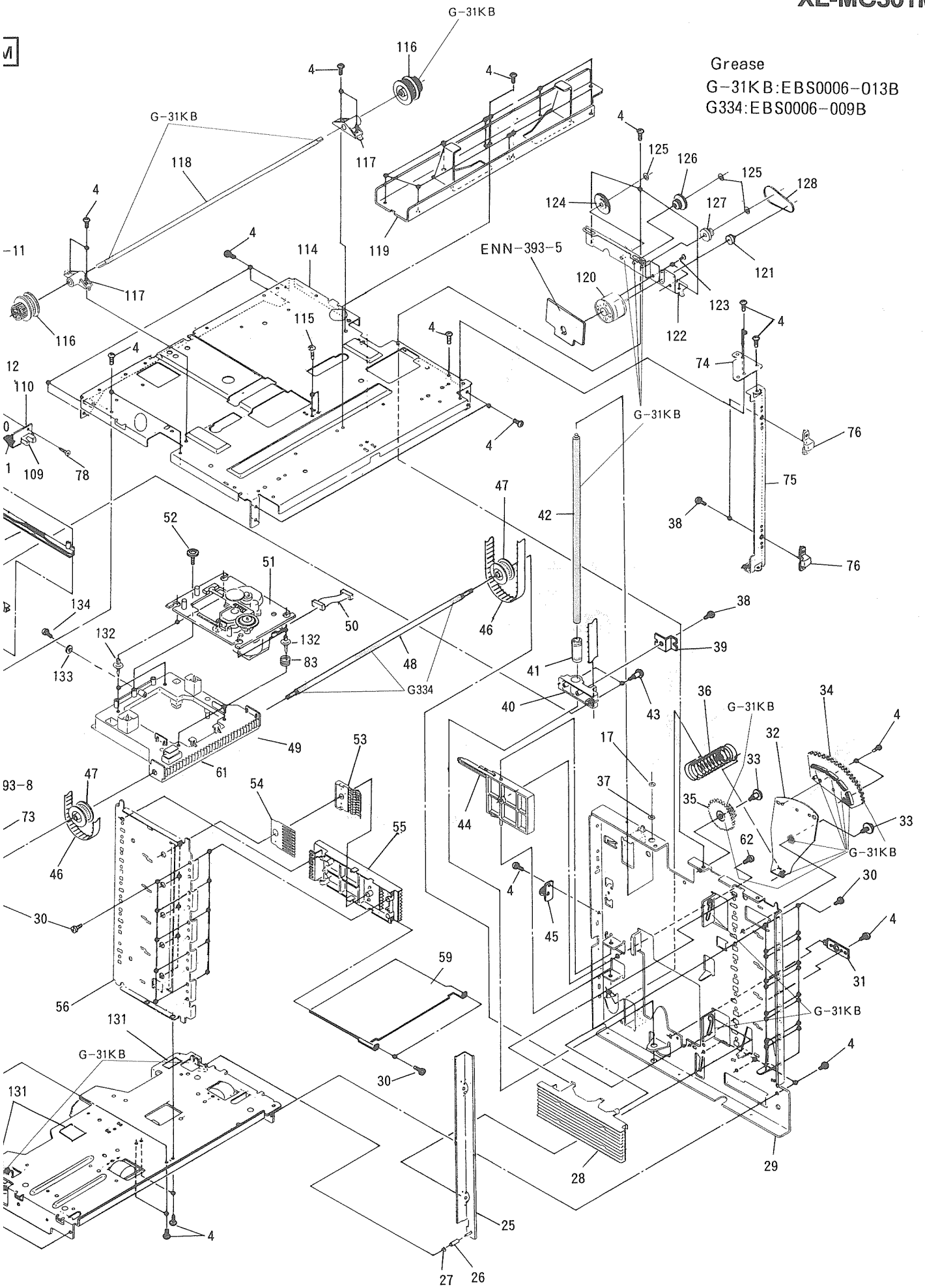
No mark indicates all area.

Changer Mechanism Ass'y and Parts List

■ Grease Point

Symbol No. M 4 M M

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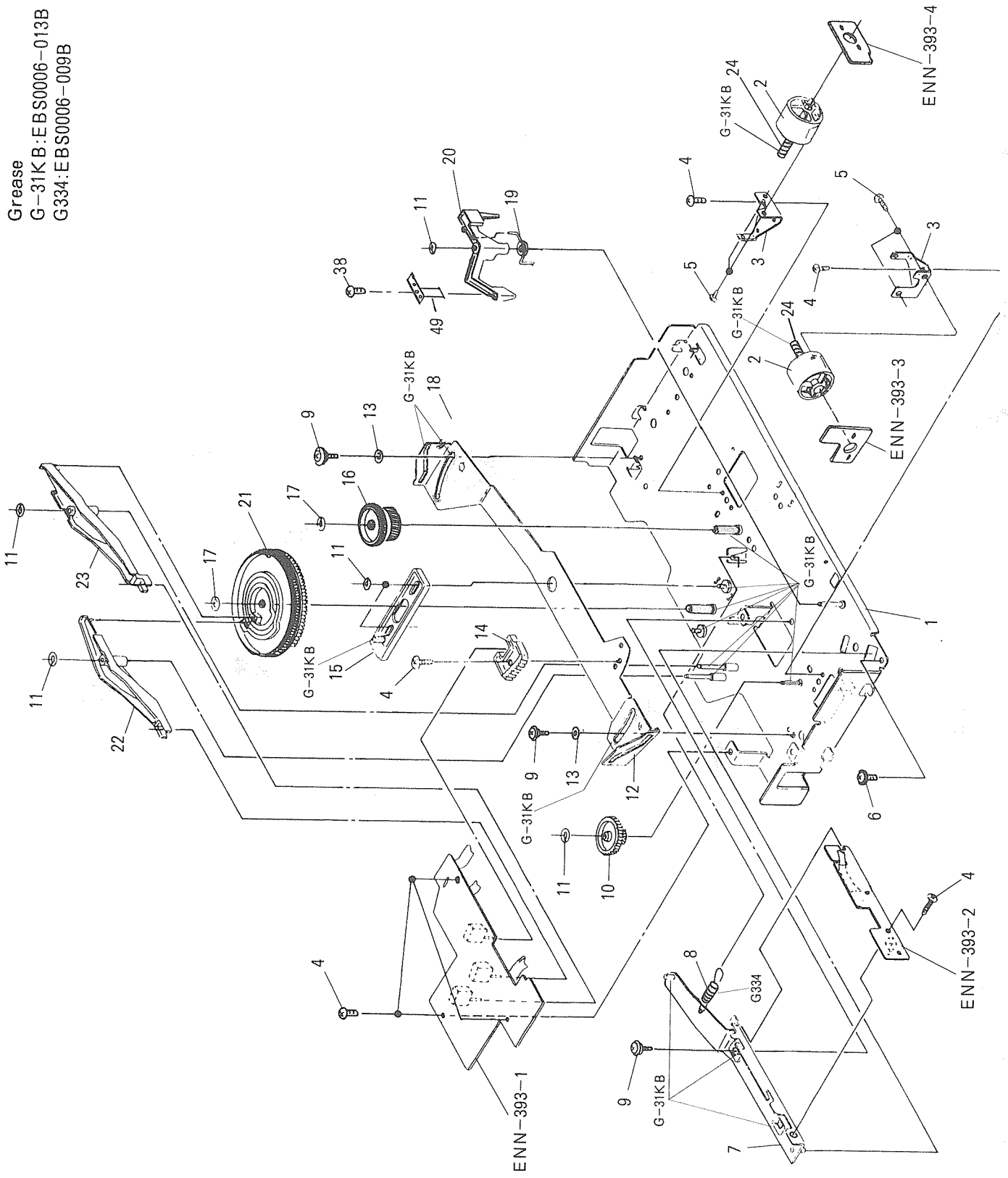
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ENN-393-1
ENN-393-2
ENN-393-3
ENN-393-4
G-31KB
G334

■ Parts List (Changer Mechanism Ass'y)

Symbol No. M 4 M M

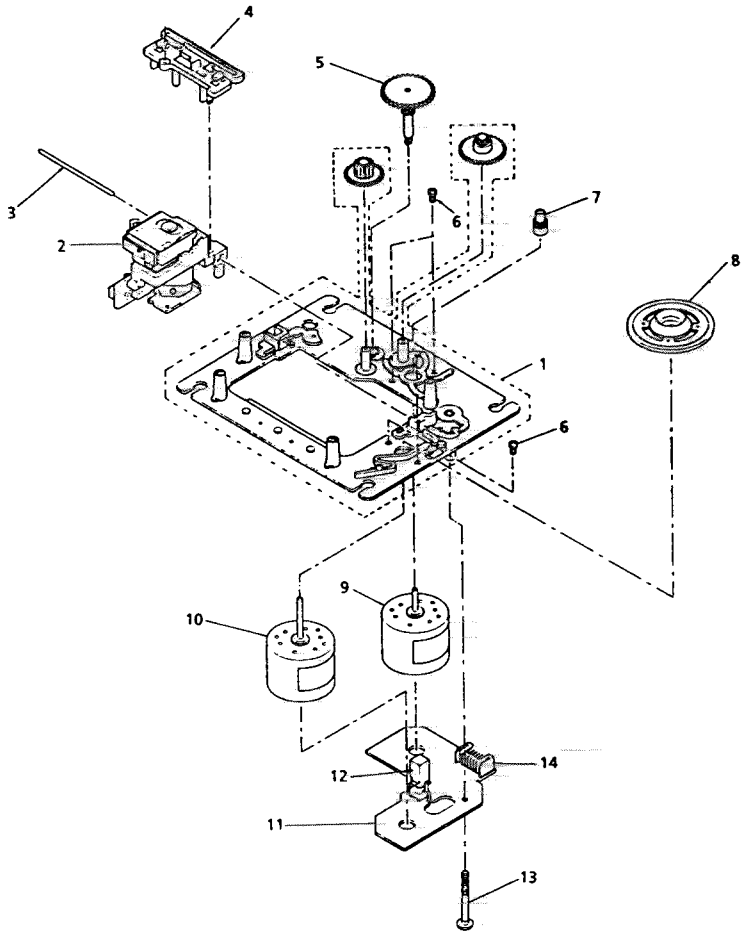
⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	E207894-003	MECHA BASE ASSY	1		
	2	RF-500TB-12560	DC MOTOR	2		
	3	E407647-001	MOTOR BRACKET	2		
	4	SBST2606Z	TAPPING SCREW	59		
	5	SPSK2625Z	SCREW	3		
	6	GBST3006Z	SCREW	1		
	7	E308585-001	LINK ASSY	1		
	8	E407706-009	SPRING	1		
	9	E74727-006	SPECIAL SCREW	2		
	10	E407675-001	CAM GEAR	1		
	11	WDL216035-2	WASHER	6		
	12	E207901-002	STOPPER LINK	1		
	13	Q03093-836	PLASTIC WASHER	1		
	14	E308592-001	SUB RACK	1		
	15	E407679-002	LOCK BRACKET	1		
	16	E308600-001	WHEEL GEAR	1		
	17	WDL418050	WASHER	7		
	18	REE4000X	RING	1		
	19	E407708-004	TORSION SPRING	1		
	20	E308607-004	SWITCH LEVER	1		
	21	E207908-001	MAIN GEAR	1		
	22	E308597-001	SWITCH LEVER	1	(D)	
	23	E308598-001	SWITCH LEVER	1	(P)	
	24	E407224-001	WORM GEAR	2		
	25	E308579-002	TRAY STOPPER	1	RIGHT	
	26	E407999-001	LOADING ROLLER	2	(B)	
	27	WDL123025-4	WASHER	2		
	28	E207905-002	TRAY RAIL	1	(4)	
	29	E102738-003	SIDE PANEL	1	RIGHT	
	30	SDSF2606M	TAPPING SCREW	50		
	31	E407652-001	SHAFT STOPPER	2		
	32	E308885-001	ELEVATOR ARM	1		
	33	E75871-002	SCREW	2		
	34	E308604-002	DRIVE GEAR	1	(E)	
	35	E308603-001	CAM GEAR	1	(D)	
	36	E407706-007	SPRING	1		
	37	E408009-001	WASHER	1		
	38	SBSF2606Z	TAPPING SCREW	5		
	39	E407655-001	LOCK BRACKET	2		
	40	E308599-002	SHAFT GUIDE	1	RIGHT	
	41	E407681-003	GUIDE BUSHING	1		
	42	E407701-004	ELEVATOR SHAFT	1	RIGHT	
	43	E407682-001	SPECIAL SCREW	2		
	44	E308757-001	LOCK LEVER	1	RIGHT	
	45	E68587-002	P.W.BOARD BRACKET	2		
	46	SB-236XL025UK	TIMING BELT	2		
	47	E407673-002	TIMING GEAR ASSY	2		
	48	E407704-002	ELEVATOR SHAFT	1	(D)	
	49	E408161-001	LEAF SPRING	1		
	50	EWS266-B410	SOCKET WIRE ASSY	1	6PIN	
	51	----------	CD MECHANISM ASSY	1	See page 5-11	
	52	E65923-003	TAPPING SCREW	1		
	53	E308593-002	LOCK SPRING	2		
	54	E407648-001	LEAF SPRING	2		
	55	E207904-002	TRAY RAIL	1	(3)	
	56	E207896-004	CENTER PANEL	1	RIGHT	
	57	E207895-004	CENTER PANEL	1	LEFT	
	58	E207903-002	TRAY RAIL	1	(2)	
	59	E309324-001	TRAY BRACKET	10		
	60	E102737-003	SIDE PANEL	1	LEFT	

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	61	E207907-003	PICK-UP BASE	1		
	62	SBST2610Z	SCREW	5		
	63	E407846-001	STOPPER BRACKET	1		
	64	E65778-005	SPACER	1		
	65	E308756-001	LOCK LEVER	1	LEFT	
	66	E407702-001	ELEVATOR SHAFT	1	LEFT	
	67	E207902-002	TRAY RAIL	1	(1)	
	68	E308577-002	TRAY STOPPER	1	LEFT	
	69	E407853-002	'E' WASHER	1		
	70	E308606-001	BELT HOLDER	1	LEFT	
	71	E407705-001	MOUNT STUD	1		
	72	E308605-001	SHAFT GUIDE	1	LEFT	
	73	SPSP2006M	SCREW	1		
	74	E407653-001	LOCK BRACKET	1		
	75	E308584-005	LOCK BASE	1		
	76	E407664-003	LOCK LEVER	2		
	77	E407677-002	DRIVE ROLLER	1		
	78	SBST2004Z	TAPPING SCREW	3		
	79	E308583-002	LED BRACKET	1		
	80	E207899-002	BOTTOM PLATE	1		
	81	E308595-002	ELEVATOR RAIL	1	LEFT	
	82	E207900-003	REAR BRACKET	1		
	83	E406871-001	SPRING	1		
	84	FF-130SH-11340	DC MOTOR	1		
	85	E407893-002	MOTOR BRACKET ASSY	1		
	86	SPSK2025K	SCREW	2		
	87	E407666-002	WORM WHEEL	1		
	88	WDL316035-2	WASHER	1		
	89	E407892-001	TIMING GEAR	1	(C)	
	90	SB-270TN15-3K	TIMING BELT	1		
	91	E407920-002	FLANGE	1		
	92	E407667-001	TIMING GEAR	3		
	93	E407668-001	FLANGE	3		
	94	E306836-003	YOKE PLATE	1		
	95	E74897-002	MAGNET	1		
	96	E308581-003	CLAMPER BRACKET	1		
	97	E306835-331	CD CLAMPER	1		
	98	SBST2614Z	TAPPING SCREW	8		
	99	E207897-003	UPPER PLATE	1	TOP	
	100	WDL214035-2	WASHER	4		
	101	E407699-002	CLAMP SHAFT	2		
	102	E407707-001	SPRING	2		
	103	E407669-001	SWITCH LEVER	1		
	104	E407706-001	SPRING	1		
	105	E407658-001	LEAF SPRING	1		
	106	E207906-002	ELEVATOR RAIL	1	CENTER	
	107	E308596-003	HOOK	1		
	108	E308594-002	ELEVATOR RAIL	1	RIGHT	
	109	GP1A53HR	I.C	1	PH804	
	110	EMW20022-003	PRINTED BOARD	1		
	111	EWS266-A208	SOCKET WIRE ASSY	1	BC874	
	112	E308590-002	SENSOR BRACKET	1		
	113	SPSP2016Z	SCREW	1		
	114	E102739-003	BRACKET	1	TOP	
	115	SBST2604Z	SCREW	2		
	116	E407673-003	TIMING GEAR ASSY	1		
	117	E407671-001	SHAFT BUSHING	1		
	118	E407703-001	GEAR SHAFT	1	(U)	
	119	E208026-001	TOP BRACKET	1		
	120	RF-370CA-17315	DC MOTOR	1		

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	121	E72376-001	MOTOR PULLEY	1		
	122	E308588-002	GEAR BASE ASSY	1		
	123	SDSP3003Z	SCREW	1		
	124	E407670-001	CAM GEAR	1	(B)	
	125	WDL417050	WASHER	1		
	126	E407676-001	CAM GEAR	1	(C)	
	127	E75985-001	DRIVE GEAR	1	(1)	
	128	E75950-002	REEL BELT	1		
	129	E408105-001	ROCK BRACKET	1		
	130	SDSF2004Z	SCREW	1		
	131	E306805-125	SPECER	3		
	132	E406294-002	INSULATOR	1		
	133	E407672-001	LOADING ROLLER	1		
	134	E408570-001	ROLLER STUD	1		
	135	E407224-001	WORM	1		

CD Mechanism Ass'y and Parts List

Symbol No. M 2 M M



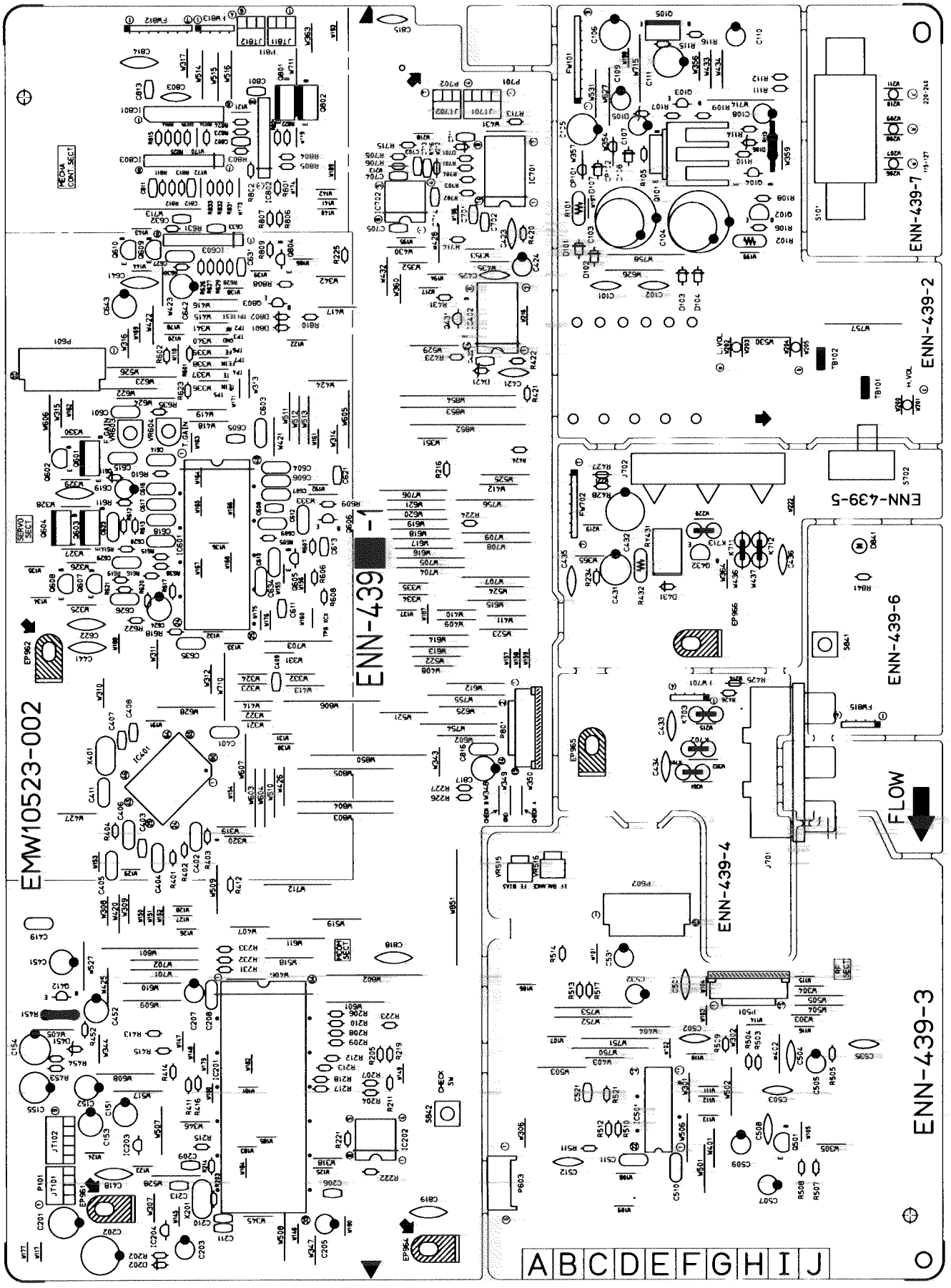
■ Parts List (CD Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	EPB-002A	MECHANISM BASE ASSY	1		
2	OPTIMA-6S	PICK UP ASSY	1		
3	E407782-001	SHAFT	1		
4	E307746-001	CD RACK	1		
5	EPB-003A	GEAR (3)	1		
6	SDSP2003N	SCREW	4		
7	E406750-001	PINION GEAR	1		
8	E75807-302	TURN TABLE	1		
9	E406784-001	FEED MOTOR	1		
10	E406783-001	SPINDLE MOTOR	1		
11	EMW10190-001(S)	CIRCUIT BOARD	1		
12	ESB1100-005	LEAF SWITCH	1		
13	E75832-001	SCREW	1		
14	EMV5109-006B	PLUG ASSY	1	6PIN	

Printed Circuit Board Ass'y and Parts List

■ ENN-439 □ Main PC Board Ass'y

Note : ENN-439 □ varies according to the areas employd. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Dasignated Areas
ENN-439 [A]	J	the U.S.A.
ENN-439 [B]	C	Canada

TRANSISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q101	2SB1565(E,F)	SI.TRANSIST ROHM	
	Q102	2SC2060(Q,R)	SI.TRANSIST ROHM	
	Q103	2SD1302	SI.TRANSIST MATSUSHITA	
	Q104	2SA933S(RS)	SI.TRANSIST	
	Q105	2SB1357(E,F)	SI.TRANSIST ROHM	
	Q501	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q601	2SD2037(E,F)	SI.TRANSIST ROHM	
	Q602	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q603	2SD2037(E,F)	SI.TRANSIST ROHM	
	Q604	2SB1357(E,F)	SI.TRANSIST ROHM	
	Q605	DTC144ES	DIGITAL TRA ROHM	
	Q606	2SC1740S(R,S)	SI.TRANSIST ROHM	
	Q607	2SC2060(Q,R)	SI.TRANSIST ROHM	
	Q608	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q609	2SC2060(Q,R)	SI.TRANSIST ROHM	
	Q610	2SA934(Q,R)	SI.TRANSIST ROHM	
	Q801	2SD2037(E,F)	SI.TRANSIST ROHM	
	Q802	2SB1357(E,F)	SI.TRANSIST ROHM	

I. C. S.

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC201	M38022M4-270SP	I.C(MICRO-C MITSUBISHI	
	IC202	AT24C16P-10PC	I.C(M) MITSUBISHI	
	IC203	MN1281(Q)	I.C(DIGI-MO MATSUSHITA	
	IC204	MN1281(Q)	I.C(DIGI-MO MATSUSHITA	
	IC401	CXD2500BQ	I.C(MICRO-P 1680	
	IC402	TC74HC125AP	I.C(DIGI-MO TOSHIBA	
	IC501	CXA1571S	I.C(MONO-AN 1680	
	IC601	CXA1372S	I.C(MONO-AN 1680	
	IC603	M5218AL	I.C(MONO-AN MITSUBISHI	
	IC701	HD74LS05P	I.C(DIGI-OT HITACHI	
	IC702	SN75451BP	I.C(MONO-AN 1679	
	IC801	STA341M(A)	TRANSISTOR SANKEN	
	IC802	M5218AL	I.C(MONO-AN MITSUBISHI	
	IC803	M5218AL	I.C(MONO-AN MITSUBISHI	

DIODES

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	D101	11E2	SI.DIODE NIHONINTER	
	D102	11E2	SI.DIODE NIHONINTER	
	D103	11E2	SI.DIODE NIHONINTER	
	D104	11E2	SI.DIODE NIHONINTER	
	D105	MTZ5.6JA	ZENER DIODE ROHM	
	D106	MTZ5.6JA	ZENER DIODE ROHM	
	D107	11E2	SI.DIODE NIHONINTER	
	D108	11E2	SI.DIODE NIHONINTER	
	D202	1SS133	SI.DIODE ROHM	
	D701	1SS133	SI.DIODE ROHM	
	D841	SLR-342VC3F	L.E.D. ROHM	

CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	C101	QCF31HP-473Z	0.047MF 50V CER.CAPACI	
	C102	QCF31HP-473Z	0.047MF 50V CER.CAPACI	
	C103	QETB1CM-228M	2200MF 16V E.CAPACITO	
	C104	QETB1CM-228M	2200MF 16V E.CAPACITO	
	C105	QETB1CM-227	220MF 16V AL E.CAPAC	
	C106	QETB1CM-227	220MF 16V AL E.CAPAC	
	C107	QETB1HM-225	2.2MF 50V AL E.CAPAC	
	C108	QETB1HM-225	2.2MF 50V AL E.CAPAC	
	C109	QETB1AM-227	220MF 10V E.CAPACITO	
	C110	QETB1AM-476	47MF 10V E.CAPACITO	
	C111	QETC0JM-477ZN	470MF 6.3V AL E.CAPAC	
	C151	QETB1AM-227	220MF 10V E.CAPACITO	
	C152	QETB1AM-227	220MF 10V E.CAPACITO	
	C153	QETB1AM-227	220MF 10V E.CAPACITO	
	C154	QETB1EM-227	220MF 25V AL E.CAPAC	

CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	C155	QETB1EM-227	220MF 25V AL E.CAPAC	
	C201	QETB1AM-477	470MF 10V E.CAPACITO	
	C202	QETB1AM-108	1000MF 10V E.CAPACITO	
	C203	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C205	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C206	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C207	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C208	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C209	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C210	QCT30CH-100Y	10PF 50V CER.CAPACI	
	C211	QCT30CH-100Y	10PF 50V CER.CAPACI	
	C213	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C401	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C402	QFN81HJ-473	0.047MF 50V METAL.MYLA	
	C403	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C404	QFN81HJ-152	1500PF 50V METAL.MYLA	
	C405	QFN81HJ-102	1000PF 50V METAL.MYLA	
	C406	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C407	QCT30CH-6R8Y	6.8PF 50V CER.CAPACI	
	C408	QCT30CH-160Y	16PF 50V CER.CAPACI	
	C418	QCF21HP-223A	0.022MF 50V CER.CAPACI	
	C422	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C423	QCF31HP-102Z	1000PF 50V CER.CAPACI	
	C424	QETB1EM-226N	22MF 25V E.CAPACITO	
	C425	QCS31HJ-560Z	56PF 50V CER.CAPACI	
	C501	QCS31HJ-100Z	10PF 50V CER.CAPACI	
	C502	QCS31HJ-100Z	10PF 50V CER.CAPACI	
	C503	QCS31HJ-101Z	100PF 50V CER.CAPACI	
	C504	QCS31HJ-820Z	82PF 50V CER.CAPACI	
	C505	QETB1AM-476	47MF 10V E.CAPACITO	
	C507	QETB1AM-107	100MF 10V AL E.CAPAC	
	C508	QCF31HP-102Z	1000PF 50V CER.CAPACI	
	C509	QETB1HM-105	1MF 50V AL E.CAPAC	
	C510	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C511	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C512	QCS21HJ-220A	22PF 50V CER.CAPACI	
	C521	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C531	QETB1AM-107	100MF 10V AL E.CAPAC	
	C532	QETB1AM-107	100MF 10V AL E.CAPAC	
	C535	QCS21HJ-180A	18PF 50V CER.CAPACI	
	C601	QFN81HJ-182	1800PF 50V METAL.MYLA	
	C603	QFN81HJ-222	2200PF 50V METAL.MYLA	
	C604	QFN81HJ-222	2200PF 50V METAL.MYLA	
	C605	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C606	QFN81HJ-333	0.033MF 50V MYLAR CAPA	
	C607	QFN81HJ-103	0.01MF 50V METAL.MYLA	
	C608	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C609	QFN81HJ-333	0.033MF 50V MYLAR CAPA	
	C610	QCZ0205-155	1.5MF 25V C.CAPACITO	
	C611	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C612	QFN81HJ-104	0.1MF 50V METAL.MYLA	
	C613	QCBB1HK-471Y	470PF 50V CER.CAPACI	
	C614	QFN81HJ-104	0.1MF 50V METAL.MYLA	
	C615	QFN81HJ-333	0.033MF 50V MYLAR CAPA	
	C616	QFV81HJ-473	0.047MF 50V THIN FILM	
	C617	QFV81HJ-473	0.047MF 50V THIN FILM	
	C618	QFV81HJ-473	0.047MF 50V THIN FILM	
	C619	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C620	QFN81HJ-104	0.1MF 50V METAL.MYLA	
	C622	QCF21HP-223A	0.022MF 50V CER.CAPACI	
	C623	QFN81HJ-333	0.033MF 50V MYLAR CAPA	
	C624	QETC1EM-106ZM	10MF 25V AL E.CAPAC	
	C626	QFN81HJ-183	0.018MF 50V METAL.MYLA	
	C627	QFN81HJ-103	0.01MF 50V METAL.MYLA	
	C629	QFN81HJ-393	0.039MF 50V METAL.MYLA	
	C632	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C633	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C641	QCF21HP-223A	0.022MF 50V CER.CAPACI	
	C701	QCBB1HK-101Y	100PF 50V CER.CAPACI	
	C702	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C705	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C801	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C802	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C803	QCF31HP-103Z	0.01MF 50V CER.CAPACI	
	C811	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
	C812	QCHB1EZ-223	0.022MF 25V CER.CAPACI	

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
△	R101	PTH61G30BD2R2N	FUSIBLE RE	C
△	R101	QRD14CJ-2R2SX	2.2 1/4W UNF.CARBON	J
△	R102	PTH61G30BD2R2N	FUSIBLE RE	C
△	R102	QRD14CJ-2R2SX	2.2 1/4W UNF.CARBON	J
	R105	QRD161J-222	2.2K 1/6W CARBON RES	
	R106	QRD161J-222	2.2K 1/6W CARBON RES	
	R107	QRD161J-221	220 1/6W CARBON RES	
	R108	QRD161J-221	220 1/6W CARBON RES	
	R109	QRD161J-221	220 1/6W CARBON RES	
	R110	QRD161J-221	220 1/6W CARBON RES	

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R111	QRD161J-202	2K 1/6W CARBON RES	
	R112	QRD161J-202	2K 1/6W CARBON RES	
△	R113	QRZ0077-100	10 1/4W FUSIBLE RE	C
	R114	QRD161J-821	820 1/6W CARBON RES	
	R115	QRD161J-102	1K 1/6W CARBON RES	
	R116	QRD161J-102	1K 1/6W CARBON RES	
	R202	QRD161J-821	820 1/6W CARBON RES	
	R203	QRD161J-105	1M 1/6W CARBON RES	
	R204	QRD167J-223	22K 1/6W CARBON RES	
	R205	QRD167J-223	22K 1/6W CARBON RES	
	R206	QRD167J-223	22K 1/6W CARBON RES	
	R207	QRD167J-223	22K 1/6W CARBON RES	
	R208	QRD167J-223	22K 1/6W CARBON RES	
	R209	QRD167J-223	22K 1/6W CARBON RES	
	R210	QRD167J-223	22K 1/6W CARBON RES	
	R211	QRD167J-223	22K 1/6W CARBON RES	
	R212	QRD167J-223	22K 1/6W CARBON RES	
	R213	QRD167J-223	22K 1/6W CARBON RES	
	R214	QRD167J-223	22K 1/6W CARBON RES	
	R215	QRD167J-223	22K 1/6W CARBON RES	
	R216	QRD167J-223	22K 1/6W CARBON RES	
	R217	QRD167J-223	22K 1/6W CARBON RES	
	R218	QRD167J-223	22K 1/6W CARBON RES	
	R219	QRD167J-223	22K 1/6W CARBON RES	
	R221	QRD167J-223	22K 1/6W CARBON RES	
	R222	QRD161J-103	10K 1/6W CARBON RES	
	R223	QRD167J-223	22K 1/6W CARBON RES	
	R224	QRD161J-472	4.7K 1/6W CARBON RES	
	R225	QRD161J-103	10K 1/6W CARBON RES	
	R226	QRD161J-103	10K 1/6W CARBON RES	
	R227	QRD161J-103	10K 1/6W CARBON RES	
	R231	QRD161J-103	10K 1/6W CARBON RES	
	R233	QRD161J-103	10K 1/6W CARBON RES	
	R401	QRD167J-682	6.8K 1/6W CARBON RES	
	R402	QRD167J-332	3.3K 1/6W CARBON RES	
	R403	QRD161J-103	10K 1/6W CARBON RES	
	R404	QRD167J-113	11K 1/6W CARBON RES	
	R411	QRD161J-103	10K 1/6W CARBON RES	
	R412	QRD161J-103	10K 1/6W CARBON RES	
	R413	QRD161J-103	10K 1/6W CARBON RES	
	R414	QRD161J-103	10K 1/6W CARBON RES	
	R415	QRD161J-103	10K 1/6W CARBON RES	
	R420	QRD167J-151	150 1/6W CARBON RES	
	R421	QRD161J-681	680 1/6W CARBON RES	
	R423	QRD161J-101	100 1/6W CARBON RES	
	R424	QRD167J-223	22K 1/6W CARBON RES	
	R426	QRD161J-750	75 1/6W CARBON RES	
	R503	QRD161J-183	18K 1/6W CARBON RES	
	R504	QRD161J-183	18K 1/6W CARBON RES	
	R505	QRD167J-121	120 1/6W CARBON RES	
	R507	QRD161J-100	10 1/6W CARBON RES	
	R508	QRD161J-120	12 1/6W CARBON RES	
	R509	QRD161J-910Y	91 1/6W CARBON RES	
	R510	QRD161J-103	10K 1/6W CARBON RES	
	R511	QRD167J-332	3.3K 1/6W CARBON RES	
	R512	QRD167J-822	8.2K 1/6W CARBON RES	
	R513	QRD167J-113	11K 1/6W CARBON RES	
	R514	QRD161J-104	100K 1/6W CARBON RES	
	R517	QRD161J-103	10K 1/6W CARBON RES	
	R521	QRD161J-102	1K 1/6W CARBON RES	
	R601	QRD161J-472	4.7K 1/6W CARBON RES	
	R602	QRD161J-472	4.7K 1/6W CARBON RES	
	R605	QRD161J-102	1K 1/6W CARBON RES	
	R606	QRD161J-104	100K 1/6W CARBON RES	
	R607	QRD161J-103	10K 1/6W CARBON RES	
	R608	QRD161J-183	18K 1/6W CARBON RES	
	R609	QRD161J-183	18K 1/6W CARBON RES	
	R610	QRD161J-224	220K 1/6W CARBON RES	
	R611	QRD161J-2R2	2.2 1/6W CARBON RES	
	R612	QRD161J-164YT	160K 1/6W CARBON RES	
	R613	QRD167J-134	130K 1/6W CARBON RES	
	R614	QRD161J-2R2	2.2 1/6W CARBON RES	
	R615	QRD161J-224	220K 1/6W CARBON RES	
	R616	QRD161J-333	33K 1/6W CARBON RES	
	R617	QRD161J-103	10K 1/6W CARBON RES	
	R618	QRD167J-514	510K 1/6W CARBON RES	
	R619	QRD161J-2R2	2.2 1/6W CARBON RES	
	R620	QRD167J-153	15K 1/6W CARBON RES	
	R621	QRD161J-393	39K 1/6W CARBON RES	
	R622	QRD161J-124	120K 1/6W CARBON RES	
	R623	QRD161J-472	4.7K 1/6W CARBON RES	
	R626	QRD161J-203	20K 1/6W CARBON RES	
	R627	QRD161J-273	27K 1/6W CARBON RES	
	R628	QRD161J-752	7.5K 1/6W CARBON RES	
	R629	QRD161J-752	7.5K 1/6W CARBON RES	
	R630	QRD161J-333	33K 1/6W CARBON RES	
	R631	QRD161J-2R2	2.2 1/6W CARBON RES	
	R635	QRD161J-475	4.7M 1/6W CARBON RES	
	R638	QRD161J-823	82K 1/6W CARBON RES	
	R701	QRD161J-102	1K 1/6W CARBON RES	
	R702	QRD161J-221	220 1/6W CARBON RES	
	R703	QRD161J-472	4.7K 1/6W CARBON RES	
	R704	QRD161J-472	4.7K 1/6W CARBON RES	
	R705	QRD161J-102	1K 1/6W CARBON RES	
	R801	QRD161J-203	20K 1/6W CARBON RES	

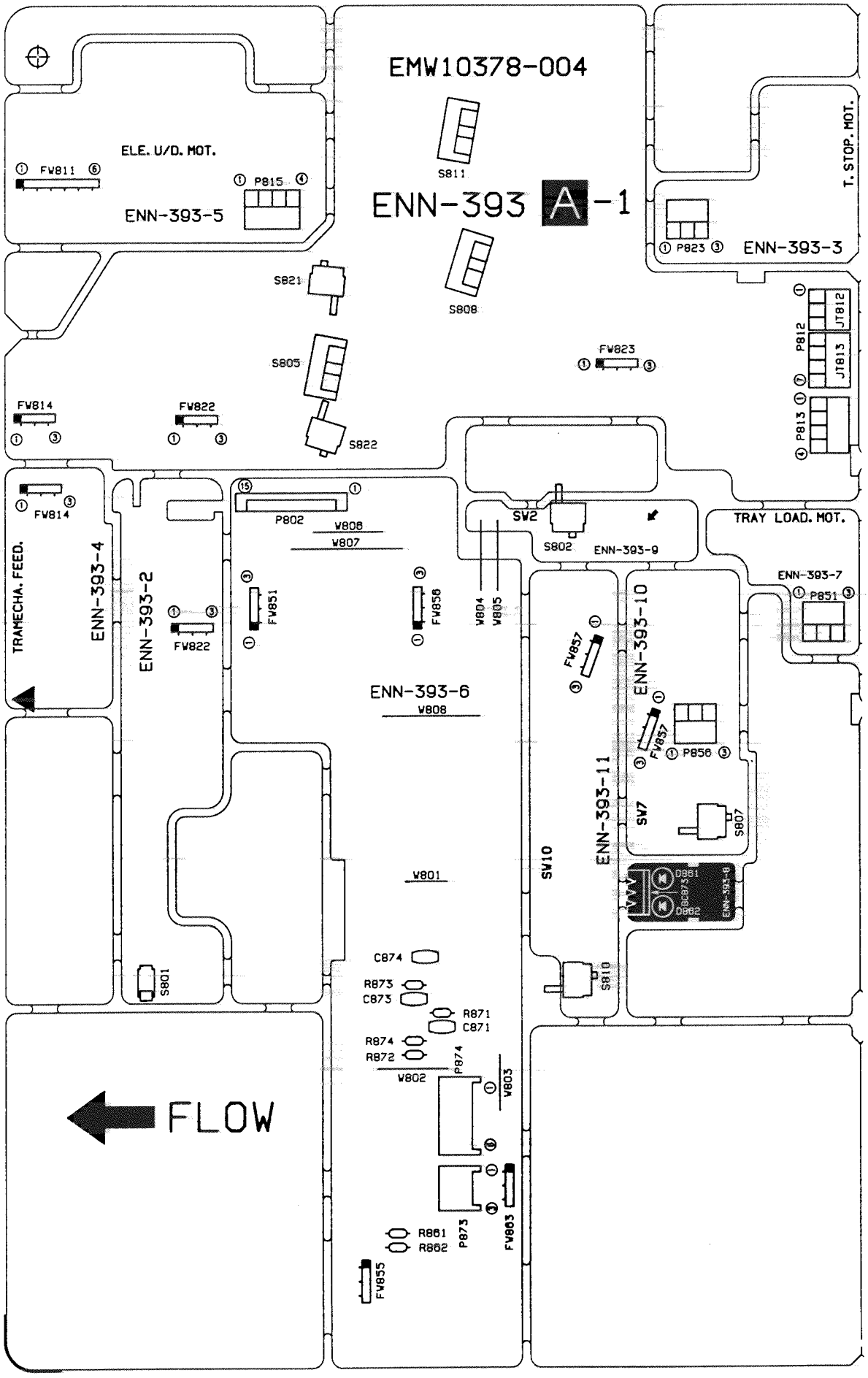
RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R802	QRD161J-203	20K 1/6W CARBON RES	
	R803	QRD161J-823	82K 1/6W CARBON RES	
	R804	QRD161J-823	82K 1/6W CARBON RES	
	R805	QRD161J-2R2	2.2 1/6W CARBON RES	
	R806	QRD161J-333	33K 1/6W CARBON RES	
	R807	QRD161J-333	33K 1/6W CARBON RES	
	R811	QRD167J-223	22K 1/6W CARBON RES	
	R812	QRD167J-223	22K 1/6W CARBON RES	
	R813	QRD161J-273	27K 1/6W CARBON RES	
	R814	QRD161J-273	27K 1/6W CARBON RES	
	R815	QRD167J-151	150 1/6W CARBON RES	
	R821	QRD161J-243	24K 1/6W CARBON RES	
	R822	QRD161J-243	24K 1/6W CARBON RES	
	R823	QRD161J-333	33K 1/6W CARBON RES	
	R824	QRD161J-333	33K 1/6W CARBON RES	
	R825	QRD167J-151	150 1/6W CARBON RES	
	R831	QRD167J-223	22K 1/6W CARBON RES	
	R832	QRD167J-223	22K 1/6W CARBON RES	
	R833	QRD167J-223	22K 1/6W CARBON RES	
	R834	QRD167J-223	22K 1/6W CARBON RES	
	R835	QRD167J-151	150 1/6W CARBON RES	
	R841	QRD161J-331	330 1/6W CARBON RES	
	VR515	QVPA603-203M	20K TRIMMER RE	
	VR516	QVPA603-203M	20K TRIMMER RE	
	VR603	QVPA601-203A	20K VARIABLE R	
	VR604	QVPA601-203A	20K VARIABLE R	

OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMW10523-002	PRINTED BOA	
		E70945-H3S	HEAT SINK	
		SBSE3008Z	SCREW	
	J701	EMN00YV-322A	PIN JACK	
	P501	EMV7144-015R	CONNECT TER	
	P601	EMV7123-015R	MALE CONNEC	
	P602	EMV7123-015R	MALE CONNEC	
	P603	EMV5109-006B	CONNECT TER	
	P701	EMV7122-004Z	CONNECT TER	
	P801	EMV7144-015R	CONNECT TER	
	S841	ESP0001-023M	TACT SWITCH	
	S842	ESP0001-023M	TACT SWITCH	
	X201	ECX0007-987KNTJ	CRYSTAL	
	X401	ECX0169-344EA	CRYSTAL	
△	CP101	ICP-N15	I.C.PROTECT	C
△	CP102	ICP-N15	I.C.PROTECT	C
	EP961	EMZ4002-001Z	EARTH PLATE	
	FW101	EWR39B-30LST	FLAT WIRE A	
	FW701	EWR34B-10LST	FLAT WIRE A	
	FW812	EWR37B-40LST	FLAT WIRE A	
	FW813	EWR34B-40LST	FLAT WIRE A	
	FW815	EWR34B-16LST	FLAT WIRE A	
	JT101	EMV7122-004Z	CONNECT TER	
	JT102	EMV7122-005	MALE CONNEC	
	JT811	EMV7122-103	CONNECT TER	
	JT812	EMV7122-103	CONNECT TER	
	TB101	EMZ4001-001	TAB	
	TB102	EMZ4001-001	TAB	

■ ENN-393 [A] Mecha Switch PC Board Ass'y



DIODES

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D861	SLA-380LTA47	L.E.D.	
	D862	SLA-380MTA47	L.E.D. ROHM	

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C871	QCHB1EZ-223	0.022MF 25V CER.CAPACI	TO
	C873	QCHB1EZ-223	0.022MF 25V CER.CAPACI	TO
	C874	QCHB1EZ-223	0.022MF 25V CER.CAPACI	TO

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R861	QRD167J-431	430 1/6W CARBON RES	IS
	R862	QRD167J-201	200 1/6W CARBON	
	R871	QRD167J-472	4.7K 1/6W CARBON RES	IS
	R872	QRD167J-331	330 1/6W CARBON	
	R873	QRD167J-472	4.7K 1/6W CARBON RES	IS
	R874	QRD167J-331	330 1/6W CARBON	

OTHERS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	P802	EMV7144-015	F.P.C.PLUG(15PIN)	
	P813	EMV7122-004	CONNECT TERMINAL(4PIN)	
	P815	EMV7122-004	CONNECT TERMINAL(4PIN)	
	P823	EMV7122-103	CONNECT TERMINAL(3PIN)	
	P851	EMV7122-103	CONNECT TERMINAL(3PIN)	
	P856	EMV7122-103	CONNECT TERMINAL(3PIN)	
	P873	EMV5109-003B	CONNECTOR(3PIN)	
	P874	EMV5109-006B	CONNECT TERMINAL(6PIN)	
	S801	QSM2001-E01	MICRO SWITCH	
	S802	QSP2K11-E04	PUSH SWITCH	
	S805	ESS1200-002	LEVER SWITCH	
	S807	QSP2K11-E04	PUSH SWITCH	
	S808	ESS1200-002	LEVER SWITCH	
	S810	QSP2K11-E04	PUSH SWITCH	
	S811	ESS1200-002	LEVER SWITCH	
	BC873	EWS263-F222	SOCKET WIRE ASSY(3PIN)	
	FW811	EWR36B-50LST	FLAT WIRE ASSY(6PIN)	
	FW814	EWR33B-10SST	FLAT WIRE ASSY(3PIN)	
	FW822	EWR33B-13SST	FLAT WIRE ASSY(3PIN)	
	FW823	EWR33B-08LST	FLAT WIRE ASSY(3PIN)	
	FW851	EWR33B-08LST	FLAT WIRE ASSY(3PIN)	
	FW856	EWR33B-10LST	FLAT WIRE ASSY(3PIN)	
	FW857	EWR33B-20SST	FLAT WIRE ASSY(3PIN)	
	JT812	EMV7122-103	CONNECT TERMINAL(3PIN)	
	JT813	EMV7122-004	CONNECT TERMINAL(4PIN)	

Accessories List

Symbol No. M 6 M M

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	E30580-2269B	INSTRUCTION BOOK	1		J
		E30580-2270A	INSTRUCTION BOOK	1		C
	2	RM-SXMC301U	REMOCON UNIT	1		
	3	R6PRPA-2STSA	BATTERY	1		
	4	EWP805-012	REMOTE WIRE	1		
	5	EWP309-003	3P RCA CORD	1		
	6	QMP1E00-183J5	POWER CORD	1		
	7	EWP302-013K	SIGNAL CORD	1		
	8	E300196-010B	ENVELOPE	1		
	9	BT-51006-1	WARRANTY CARD	1		J
	10	BT20044G	SAFETY INSTRUCTION	1		J
	11	BT-20137	SVC CENTER LIST	1		J
		BT-20071B	SVC CENTER LIST	1		C
	12	BT-51001-1	J=W.CARD	1		J
	13	BT-20025M	C=W.CARD	1		C
	14	NS4571-003	C.D BOOKLET	1		
	15	E308801-001	SHEET	1		
	16	E300196-131	ENVELOPE	1		
	17	QPGA040-04305B	ENVELOPE	1		

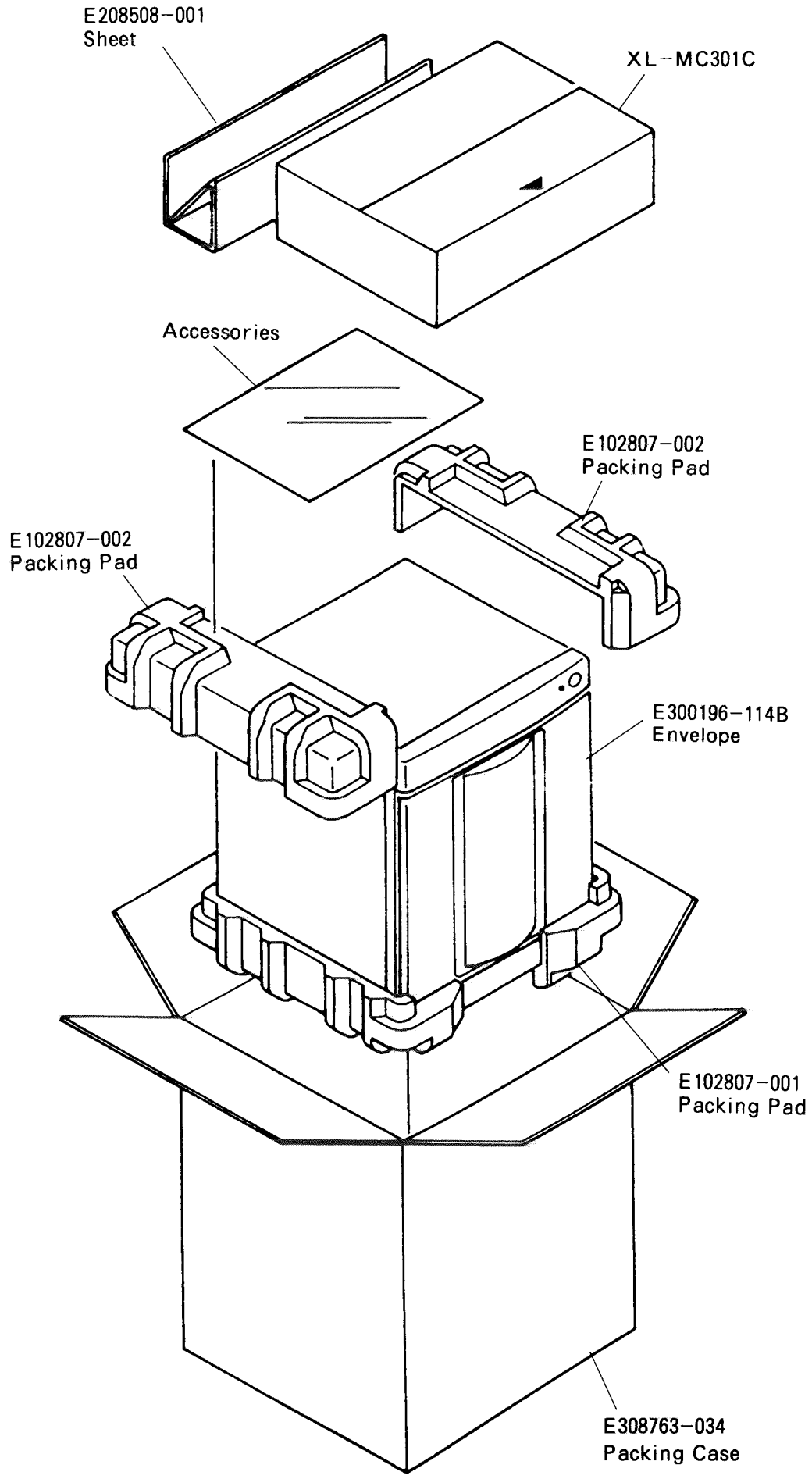
⚠ : Safety Parts

The Marks for Designated Areas

J ..... the U.S.A. C ..... Canada No mark indicates all area

Packing Materials and Part Numbers

Symbol No. M 7 M M



Packing Materials and Part Numbers

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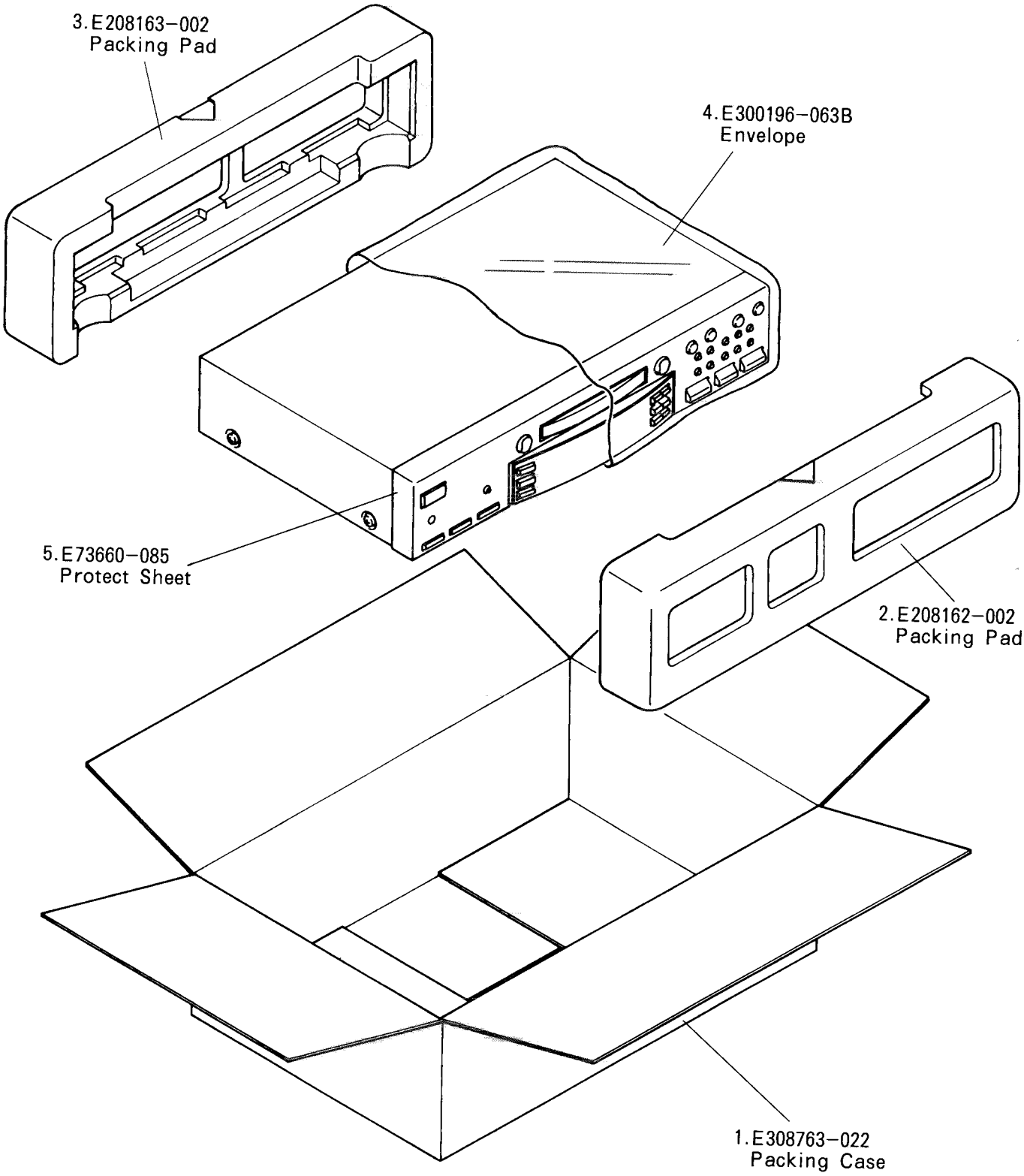

-MEMO-

XL-MC301

JVC

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